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Proceedings of the Madras Literary Society and Auxiliary of the Royal Asiatic Society.

Session 1889-1890.

No meeting of the Society was held.

A paper 'on the coins of Sethupatis' was received from the Rev. J. E. Tracy, M.A.

Session 1890-1891.

No meeting of the Society was held.

Session 1891-1892.

The first ordinary meeting of the society took place on Thursday, the 3rd April, at 5-30 P.M., in the Reading Room of the Old College, Nungumbaukum.

The Rev. William Miller, M.A., L.L.D., C.I.E.,
in the Chair.

Dr. Bourne exhibited, on behalf of H. R. P. Carter Esq., some specimens of crocodiles, and made some remarks upon the characters proposed by that gentleman for the distinction of the two species:—*C. porosus* and *C. palustris*.

Mr. C. Michie Smith exhibited, and made some remarks upon a new and convenient form of barograph, and also a number of Madras barograms which had been taken by the instrument.

Mr. Edgar Thurston exhibited a collection of the various species of Batrachia to be found in the city of Madras.

Mr. C. Michie Smith exhibited a copy of Rowland's enlarged photograph of the B and D lines.

The following papers were read:—

1. "On some old Graves in the Pollachi Taluk, Coimbatore." By H. O. D. Harding, C. S. (Communicated by Mr. Thurston).

2. "Note on Batrachians." By Edgar Thurston.

3. "On the Fauna of a Madras Pond and its Monthly Variations." By A. Sambasivan, B. A. (Communicated by Dr. Bourne).

The second ordinary meeting of the Society took place on Thursday, the 14th May, at 5-30 P.M., in the Reading Room of the Old College, Nungumbaukum.

H. B. Grigg, Esq., M.A., C.I.E., in the Chair.

Mr. Thurston exhibited the skin of a Hamadryad (*Naia bungarus*, Schleg), one of the two species of *Naia* (*N. bungarus* and *N. tripudians*, the Cobra) which occur in Peninsular India. The snake, whose skin was exhibited, was shot about 20 miles from Russelkonda, and, when measured after death, was found to be 13 feet in length. A note on this snake by "Smoothbore" was published in the *Asian*, April 24th, 1891.

The largest specimen of the Hamadryad in the British Museum measures 13 feet.

In the *Asian*, April 24th, 1891, "Smoothbore" also refers to a duck, shot by Major Felton of the 4th Madras Cavalry near Gooty, which he believed to be the female of *Anas boschus*, the mallard, and he says "if it proves to be *Anas boschus*, this will be the first instance of this species being found in Southern India. Jerdon says he has never found it south of the Nerbudda." The wings and head were sent to Mr. Thurston, who forwarded them to the Indian Museum for comparison with the specimens of the mallard in the collection of that institution. Mr. W. L. Sclater reported that he thought "there can be little doubt that it is a mallard though I was inclined to think it might be a Spotted Bill; but I think the bill shows that it is a mallard."

The following papers were read :—

1. On the Transit of Mercury. By C. MICHIE SMITH, B.SC.
2. On the presence of stigmatic opercula in the Scorpion. By A. VAMAN PAI. (Communicated by Dr. Bourne).
3. On the Salagrama Stone. By GUSTAV OPPERT, PH.D.
4. On a Tour in Mysore. By EDGAR THURSTON.
5. Wallace on Darwinism. By R. EDMONDSON.
6. On Sanskrit Conjugation. By M. SESHAGIRI SASTRI, M.A.
7. On Telugu Singular and Plural Suffixes. By M. SESHAGIRI SASTRI, M.A.

SESSION 1892-1893.

No meeting of the Society was held.

A paper on the Coinage of Travancore was received from the Rev. S. Mateer.

Sethupati Coins.

(By Rev. JAMES E. TRACY, M.A., Tirumangalam.)

The Sethupati line, or Marava dynasty of Ramnad, in Southern India, claims great antiquity. According to popular legendary accounts it had its rise in the time of great Rama himself, who is said to have appointed on his victorious return from Lanka, seven guardians of the passage or bridge (சேது) connecting Ceylon with the mainland. These legends would carry the origin of the family back to the eleventh or twelfth century B.C. and indicate an antiquity hoary indeed; such a supposition however without any trustworthy evidence to support it will not be accepted as historical.

Another supposition places the rise of the family in the second or third century B.C. It rests its case principally upon a statement in the Mahawanso, according to which the last of the three Tamil invasions of Ceylon, which took place in the second or third century B.C., was under the leadership of seven chieftains, who are supposed, owing to the silence of Paṇḍyan records on the subject of South Indian dealings with Ceylon, to have been neither Cheras, Cholas or Paṇḍyans, but mere local adventurers whose territorial proximity and marauding ambition had tempted them to the undertaking. Some confirmation of this theory is supposed to be found in the fact that these seven invading chieftains are said to have had their capital at Nallúr, which is identified as the town now known as Virava Nullur, situated near Ramnad.

This supposition, though, like the preceding, quite unsupported by worthy historical evidence, is nevertheless more

probable. It is unlikely, however, to receive the conclusive confirmation of documentary records, since the very supposition of a wild marauding race renders it improbable that they would value or leave to posterity such records.

Another supposition places the rise of the family in the eleventh or twelfth century A.D. There are two statements of this case differing according to the source from which they come. According to the one, which has its source in South India, the rise of the family took place in or about 1059 A.D., when Raja Raja, the Chola king, upon his invasion of Ceylon, appointed princes, whom he knew to be loyal to himself, and who, according to some, had aided him in his conquest of all Paṇḍya, to act as guardians of the passage by which his armies must cross to and fro, and supplies be received from the mainland. According to the other statement, which has its source in Sinhalese records, the family took its rise from the appointment of Parakrama Bahu's general Lankapura, who, according to "a [1] very trustworthy Sinhalese epitome of the Mahawanso, after conquering Paṇḍya, remained some time at Ramespuram, building a temple there, and that while on the island he struck Kahapanas" (small coins, similar to those of the Sinhalese series).

Whichever of these statements we may accept, the facts seem to point to the rise of the family in the eleventh or twelfth century A.D., and inscriptions quoted from Dr. Burgess by Mr. Robert Sewell,[2] show that grants were made by Sethupati princes in 1414, again in 1489, still again in 1500, and finally as late as 1540. These bring the line down to within two generations of the time when Muttu Krishnappa Nayakka in 1604 is said to have found affairs sadly disordered in the Marava country and to have re-established

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[1] Cf. Rhys Davids' *Numis. Orien.*, pl. vi, s. 63.

[2] *Sketch of Dynasties of South India*, p. 87.

the old family in the person of Sadaiayaka Tevar Udaiyar Sethupati. Mr. Sewell has summarized what is known of the family since then, and mentions the fact that they had a coinage of their own. The summary needs authentification, and the coinage will, I am afraid, throw but little new light upon the subject, since the extant specimens are at their best very limited in their variety and number, and in the amount of historical information which they convey ; yet, it is quite admissible, as Nelson points out, for the family to claim high antiquity as a royal line,[3] " seeing that Ramespuram has been resorted to annually, for centuries, by large bodies of pilgrims, and that this would have been simply impossible unless some strong-handed prince or princes were ruling over the country in its neighbourhood. I think it may be pretty safely concluded that the principality of Ramnad has been in existence many centuries."

The shrine at Ramespuram was undoubtedly one of wide renown from very early times, and possibly had been famous for centuries before these invasions and counter-invasions of Chola and Sinhalese rulers took place, but there seems to be nothing in local tradition to indicate that the Sethupati had any special concern with, or responsibility for, the shrine.

The coins divide themselves into an earlier and a later series, which are quite distinct from one another. The earlier series of coins present specimens which are usually larger, and better executed, and correspond in weight and appearance very nearly to the well-known coins of the Sinhalese series, together with which they are often found. Rhys Davids says[4] "these coins are probably the very ones referred to as having been struck by Parakrama's general Lankápura at சேது."

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[3] *Madura Manual*, III, p. 110.
[4] *Numis. Orien.*, VI, p. 63.

They are of two sizes, corresponding somewhat irregularly with the massa and half-massa of the above series, and are uniformly of copper or bronze, neither gold nor silver specimens having been brought to light thus far. Captain Tufnell in his article on Fanams in the J.A.S.B. figures and describes a small gold piece (on one side of which is seen a figure standing by an altar, &c.), and expresses the opinion that it may be a coin of the Sethupati dynasty, but as it is unlike any known Sethupati coins, I think it were safer to wait for more specimens and clearer evidence, before accepting it as such.

The coins of the later series, also of copper only, are uniformly small, and very rude in device and execution. The one face in those figured always shows only the Tamil letters of the word Sethupati, while the other side is taken up with one or another of various devices of hidden import. A few coins of corresponding size in the collection of Captain Tufnell also bear the same word in Nagari on one side and on the other sometimes the figure of a god (Hanuman or Garuda usually), and on others that of an animal. Those however in both characters are like the earlier series in being of two sizes, the larger size weighing about 60 grs. and the smaller about 38 grs.

Supposing from their similarity to the Sinhalese series that the earlier series of Sethupati coins were in use about the eleventh or twelfth century, when could this later series have replaced them and come into currency. We know what style of coins were in use by the Paṇḍyan or rather Nayakka line in the time of Visvanatha, and it is fair to suppose that if the re-instated Sethupatis had a coinage of their own at that time they would be likely to imitate the types or in some way recognize the style of the Nayakka coinage. But these coins are utterly dissimilar to those known to have obtained currency at that time. Nor could these coins of the later series well belong to any still later

period. It seems to me more probable that they belong to an earlier time of confusion and decline which lies between the period when Sinhalese re-ascendancy in Ceylon had, by breaking off any considerable intercourse between that island and the mainland, left the Sethupati and their followers free to return to their wild birthright and natural instinct for a lawless life, in which commerce and trade were less secure.

There is also a small dumpy coin found in considerable numbers and frequently among undoubted Sethupati coins, which I mention with some hesitation, but which may possibly confirm a fact in the later history of this family. The legend on this coin has been read by Pandit Natesa Sastri as Sri Tondaman, and it is supposed to have been issued by the Tondaman family, which had its rise in Sethupati times and through Sethupati influence, though now a distinct line. It is possible that this coin, as an early and perhaps only issue of its kind, may have its place in this series.

Another coin too which should be mentioned in this connection, though it is by no means certain that it is a Sethupati coin has on the *obverse* a Garuda with Vishnu emblems and on the reverse what has been read " Vira Bahu " in Grantha letters. Nothing however except its dumpy style, and its having been frequently found with Sethupati coins, could warrant our placing it in this series.

The earliest allusion to Sethupati coins in any published form was made by Princep who figured and described [5] the large bull coin. Examples of it are not uncommon and have been found in Northern Ceylon as well as in various parts of Southern India. The next published reference to these coins was that which appeared in the *Numismata Orientalia* by Rhys Davids.[6] The coins there published will

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[5] *Princep's Essays*, I, p. 423, pl. xxxv.

[6] *Numis. Orien.* " On the Coins of Ceylon, " by Rhys Davids, figs. 18 and 19, pp. 30 and 31.

be referred to below. Again in the *Numis. Orien.* ("Coins of Southern India") Sir W. Elliot[7] has recently republished the one specimen originally figured by Princep and added one which will be noticed hereafter.

Description of the Coins.

The first eight numbers belong to the earlier series.

No. 1.—Copper. Weight 57 grs. (fig. 1).

Obverse.—The sitting Ceylon figure to right with the Tamil letters சேது (Setu) below the arms.

Reverse.—The standing figure, face to right, with a recumbent bull on the right and tall lamp on the left of the figure.

This coin is a clear imitation of the "lion coin of Parakrama" figured by Rhys Davids,[8] the Tamil letters of the obverse being in the same relative position as the legend on the Sinhalese coin, just as the bull of the reverse replaces the lion of the coin of Parakrama. This similarity confirms the supposition made by Rhys Davids that the coins of the earlier series were first struck by Lankápura, the general of Parakrama, who in 1153 resided for some time on the island of Ramespuram.

I know of but two specimens of this rare coin besides my own copy. Following the analogy of later coins we may suppose that a coin similar in device, of half-size, was issued, which may be expected to come to light hereafter.

No. 2.—Copper. Weight 34 grs. (fig. 5).

Obverse.—The same as in No. 1.

Reverse.—Same as reverse of No. 1 except that the bull has been replaced by five dots to the right of the figure. The dots, sometimes take the form of circles with a central dot in each. They are found, in the same position and number, on all the South Indian coins, which show the standing figure

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[7] *Numis. Orien.*, pls. iii and iv, figs. 132 and 172, p. 134.

[8] *Numis. Orien.*, pl. vi, figs. 6 and 7, p. 21.

and their significance has been a matter of much conjecture. The five, in symbolism, may refer to Indra who was the regent of that number of the eight points of the compass, and may be used to indicate that the country lay to the eastward ; or the five may refer to the five regions which were allied to one another as the parts of Dravida, and in which these coins were current, viz., Chola, Paṇḍya, Sethupati, Lanka and Malayalam ; or the five may refer to the five known products of the hill country (மலைபொருருள் ஐந்து), allusion thus being made to the hilly nature of Ceylon, just as the lamp, also used on all these coins, is an emblem for brightness and therefore stands for Lanka, the name of the island and meaning " bright " or " shining." Again the five may be an allusion to the Pancha Pandavar or five Pandava brothers to whom mythology attributes the earliest settlement of Southern India : or, finally, and this theory seems to me as probable as any, it may be merely ornamental and devoid of any hidden meaning ; it may mean none of the foregoing at all, nor indeed anything of special or hidden import.

This is the first of the two coins referred to above, as first published by Sir W. Elliot.

No. 3.—Copper. Weight 58 grs. (fig. 2).

Obverse and *Reverse*.—Same as in No. 2, of which it is a half-sized copy. The specimen in my own cabinet is much worn. There is a copy in the collection of H. C. P. Bell, Esq.

No. 4.—Copper.

Obverse.—Couchant bull to left : above, the sun and moon ; and below, the Tamil letters சேது (Setu). Border, of dots between double lines. Five triplets of dots filling the open spaces.

Reverse.—Standing figure, face to left, with club in right hand, and lamp in left. Border as in obverse. This coin has been figured, in turn, by Princep, Rhys Davids and Sir

W. Elliot,[9] and being the best known of the series does not need to be included in this plate.

No. 5.—Copper.

Obverse and *Reverse.*—Same as in No. 4. This coin is figured by Rhys Davids, who describes it as "a half-sized copy of the last, except that the large dots in the circle round the edge of the preceding coin, are here circles, and only three dots are required inside the circle to fill up the space by the side of the bull."

No. 6.—Copper. Weight 37 grs. (fig. 4).

Obverse and *Reverse.*—Same as in No. 4. This coin is thinner than many of the same size in the series, though well preserved. Probably there was a half-sized coin like this, also.

No. 7.—Copper. Weight 40 grs. (fig. 3).

Obverse.—Sitting bull to left; facing it stands a bird, probably a peacock, as the Vahana Subramanian, son of Siva: below, the Tamil letters சேது (Setu), and above, the sun and moon. Border of dots.

Reverse.—Standing figure, face to left, with club and lamp as usual. The figure is peculiar in being broad-waisted, and showing a belt or girdle about the loins.

No. 8.—Copper. Weight 40 grs. (fig. 6).

Obverse.—Couchant bull, over the Tamil letters சேது (Setu) with sun and moon above, triplets of dots in open space, and border as in No. 2.

Reverse.—The Tamil letters சேது (Setu) within an eight-pointed star which fills the entire space. The border is of dots between double lines. This coin, which is a rare one, is figured from the one in the cabinet of Captain R. H. C. Tufnell, and the only other specimen so far as I know is in the collection of H. C. P. Bell, Esq. There was doubtless a full-sized coin of which this is a half.

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[9] See also *Hints to Coin Collectors in Southern India*, by Captain R. H. Campbell Tufnell, p. 17.

The remaining numbers are of coins belonging to the later series. That side of each coin which presents the varying figures is treated as the obverse, and the other side which shows the uniform Tamil legend as the reverse. The coins are described very briefly as they afford but little historical information. The ingenious suggestion has been made, that the figure of the obverse, often, if not always, is used to suggest the unrecorded name of the ruling Sethupati of the time. For instance, Nos. 13, 14 and 15 would be coins of Ganapati Sethupati and No. 25 one of Tulsi Raman Sethupati, and so forth. It is possible that such names may hereafter find confirmation from lists, grants or other records, but till then we hesitate to accept as of much weight a theory which seems more ingenious than scientific.

No. 9.—Copper. Weight 54 grs. (fig. 7).

Obverse.—Siva to front, on kneeling bull to left.

Reverse.—சேதுபதி (Sethupati).

No. 10.—Copper. Weight 17 grs. (fig. 12).

Obverse.—Man on horse back : horse to left.

Reverse.—சேதுபதி (Sethupati).

No. 11.—Copper. Weight 53 grs. (fig. 8).

Obverse.—Siva to front on peacock to right.

Reverse.—சேதுபதி (Sethupati).

No. 12.—Copper.

Obverse.—Unknown emblem upon peacock to left.

Reverse.—சேதுபதி (Sethupati).

No. 13.—Copper. Weight 58 grs. (fig. 10).

Obverse.—Ganesha.

Reverse.—சேதுபதி (Sethupati).

No. 14.—Copper.

Obverse.—Ganesha, variant of No. 13.

Reverse.—சேதுபதி (Sethupati).

No. 15.—Copper.

Obverse.—Ganesha, another variant of No. 13.

Reverse.—சேதுபதி (Sethupati).

No. 16.—Copper. Weight 19 grs. (fig. 16).

Obverse.—Man standing with drawn bow to l.

Reverse.—சேதுபதி (Sethupati).

No. 17.—Copper. Weight 52 grs. (fig. 11).

Obverse.—Man riding a donkey. (?).

Reverse.—சேதுபதி (Sethupati).

No. 18.—Copper. Weight 20 grs. (fig. 9).

Obverse.—A scorpion.

Reverse.—சேதுபதி (Sethupati).

No. 19.—Copper. Weight 18 grs. (fig. 13).

Obverse.—Warrior standing in front of a horse or sitting bull.

Reverse.—சேதுபதி (Sethupati).

No. 20.—Copper. Weight 17½ grs. (fig. 14).

Obverse.—Rose pattern.

Reverse.—சேதுபதி (Sethupati).

No. 21.—Copper. Weight 26 grs. (fig. 15).

Obverse.—Seated priest with lingam on his right.

Reverse.—சேதுபதி (Sethupati).

No. 22.—Copper.

Obverse.—Seated figure facing to right.

Reverse.—சேதுபதி (Sethupati).

No. 23.—Copper.

Obverse.—Lingam on an altar.

Reverse.—சேதுபதி (Sethupati).

No. 24.—Copper.

Obverse.—Hanuman to left.

Reverse.—சேதுபதி (Sethupati).

No. 25.—Copper. Weight 20 grs. (fig. 17).

Obverse.—Tulsi plant in pot.

Reverse.—சேதுபதி (Sethupati).

The coins of the earlier and later series thus described lead us to conclude—

(1) That the earliest known coins of the Sethupati line belong to the period of the Chola invasions of Ceylon and

the counter-invasion of the mainland by Parakrama Bahu in the twelfth century of our era. The condition of the people previous to that time was probably such as to make any extensive commercial relations with their neighbours impracticable, and probably barter was the most convenient medium of exchange. As the Chola invasions from the well watered and richer north, and the counter-invasions from the long-settled and prosperous south took place, and the country became more settled internally and more familiar with enlarged commercial transactions, the need of coined pieces became felt, and was probably supplied in the first instance by the invaders themselves. That this foreign form of money was continued for any length of time there is no evidence to show. On the contrary the very limited number and variety of the coins in the earlier series seem to indicate that the improved condition of the people, and more settled state of the country, was not for any great length of time, but that the people soon relapsed again into a semi-barbarous and lawless life, and the coins of the later series show accordingly a degeneration in size and design amounting in some cases to utter insignificance.

(2) The coins indicate that during the period covered by both the earlier and the later series, the religious preference of the Sethupati was the worship of Siva, and not as now the worship of Vishnu. The emblems on the coins,—bull, trident, lingam, peacock and tulsi, are all specially significant of Sivaism, and the use of the form of Ganesha in the latter series is conclusive in the same direction. There is still a Siva shrine at Ramespuram, but the worship for which the place is famous and for which pilgrims come from far and near is that of Vishnu. Thousands flock thither every year to worship Vishnu while but very few come whose object is Siva worship. When did this change probably occur? Those who are familiar with South Indian numismatics will recall that the Garuda series of coins, which are probably of

the time of the Nayakkas, distinctly speak of a change in the religion of that line. The Sethupatis had been restored by the Nayakkas, and were feudatories of theirs, and it seems natural to suppose that the Sethupati change must have occurred somewhere about the same time. That the religion of the Sethupatis at the time when our coins were struck was Sivaism and *not* Vishnuvism is unquestionable.

(3) It would be interesting to know the geographical extent of the country over which the Sethupati held sway, but the data furnished by the coins are quite insufficient for forming any very definite conclusion on this point. Their coins have been found occasionally as far north as Tanjore; in considerable numbers in and about Madura; and more or less in Tinnevelly as far south as Tuticorin and old Kayal, so that, speaking in a general way, probably these were about the limits of the Marava power when at its highest; more definite conclusions however are not warranted at present.

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Note on some old graves in the Coimbatore District.

(By H. O. D. HARDING.)

In the fields in the villages of Makinaickempatti and Nattukalpolliem about 2 and 4 miles respectively to the south-east of Pollachi, are a large number of those stone dolmens locally known as Pandava Kuṛis. The village of Nattukalpolliem is particularly well favoured and its name denotes that it is the village of the planted stones. In one field to the south of this village are about 12 of these Kuṛis. They differ in outward appearance, some being merely mounds with a buried circle of upright stones surrounding them, others being what I believe are dolmens proper—that is one large flat stone lying as a roof above a chamber composed of large stone slabs. On various sides of each of these remains are planted large upright stones, sometimes as much as 12 or 14 feet high. I have recently excavated 6 of these graves, and as I think some description of them may not be uninteresting, submit this report.

The first opened will be best understood by a reference to the accompanying rough plans.

It is a stone chamber sunk in the ground as they all are. It was roofed by a slab of stone which rested on five upright stones which formed the two sides and two ends and central partition stone. It is divided into two chambers by a stone slab in the centre. Each of these chambers is again

divided into two chambers by another stone slab, not quite in the centre. The general appearance of the construction as looked at from above is shown in figure I.

Figure II is a section of the same. The sub-dividing stones of the two chambers are, as shown therein, only about 2 feet 6 inches high. About half a foot below the top of each sub-dividing stone, a flat stone slab is laid to the central stone, along the whole length of the dolmen, on both sides. To the outside of the sub-dividing stones, on both sides, is an empty space. The direction of the dolmen is east and west, and the eastern wall is one large slab, which contains two holes as shown in figures II and III. These holes are about 1 foot 3 inches in diameter, and are the doors which lead into the building from outside. They were closed outside with stone slabs. This dolmen was 6 feet deep, 3 feet 8 inches long, 5 feet broad, each chamber being about 2½ feet broad.

To one entering such a chamber through the round hole in the east wall, and supposing there to be no choking up by soil, the appearance would be a stone chamber 6 feet high by 2½ feet broad by 3 feet 8 inches long, one half of which was a stone shelf or bed, and the other a vacant space or passage.

Underneath the above mentioned stone shelves or beds, were found buried in mud the following articles of pottery: 7 pots of the kind shown as *a*, 1 of *b*, 7 of *c*, 4 of *d*, 4 of *e*, 14 of *f*, 4 of *g*, 8 of *h* and 7 of *i*.

These are all of red earthenware. *a* to *d*, are very fine work, the color is a dull red, but glazed, and barred by parallel rows of yellow lines as is roughly shown on *a*. The pots of *a*, *b*, and *d* muster are a fine polished black inside, those of *c* muster are the same inside and out.

The vessels from *e* to *i* are of a coarser make, and have no polish or ornamentation: *f* and *g* appear to be intended

as stands upon which to place *a* to *d*, all of which have round bottoms and are unfitted to stand alone: *h* and *i*, are either plates or intended as covers to other vessels. The size of each kind is shown below.

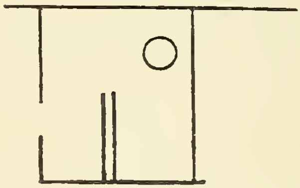
	Height.	Breadth.
a	5 inches.	4 inches.
b	10 ,,	10 at the greatest diameter.
c	3½ ,,	5½
d	6½ ,,	9
e	3½ ,,	5
f & *g*	2 inches by 3 and 4 respectively.	
h & *i*	6 and 5 inches in diameter respectively.	

After this, four other dolmens were opened. They were of a different description and contained nothing but a few fragments of bones. The 6th and last is identically the same in construction as the first, and in the same manner the same kind of pots were found under the stone benches above described. This being the same as the first, needs no description. As to the others, two were merely single stone chambers; one measured 7 feet in length by 5 feet 10 inches high, and 3 feet 6 inches broad. It was roofed by a massive block of stone and floored by a double thickness of stone slabs. The entrance was a square hole in the eastern wall about two feet from the top, the hole being about 1 foot 6 inches square. The other was similar, so was not measured.

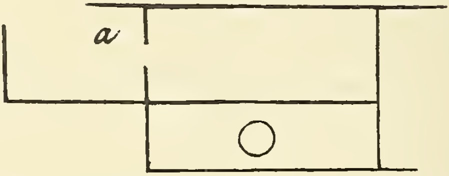
The fourth again was different and in one particular the most curious of all.

It was not measured, but is roughly some 7 feet long by 6 feet or more high by about 4 feet broad. It is entered in the same way by a hole in the eastern wall; its peculiarity is that it is divided into two chambers by a cross slab running lengthwise but only 4 feet high. In the centre of this wall about half a foot from the bottom of it,

is a hole 1 foot 2 inches in diamater which leads from one partition to the other. An end-section of this grave would be thus:



a side section thus:



the entrance being by the hole at *a*, into the south compartment.

Both compartments were floored with stone, but nothing was found under the floors.

Many of the pots are in excellent preservation and from the freshness of the colour suggest that they were new when put into the grave.

I believe the generally accepted theory as to these kuris is that they are graves. Small fragments of bones only were discovered however. The people call them houses and seem to think that they were inhabited in prehistoric times by a race of dwarfs, but for this belief there is no foundation but the smallness of the entrance holes.

One curious feature about them is that they all lie due east and west and that the entrance is invariably in the

eastern wall. The ryots say this was to keep out the South-West monsoon which was more violent in the good old days than now but I think this is little more than the Goundens' notion of a joke. Another ryot hazarded an opinion that they built their houses of stone because there was so much lightning that thatch was too liable to catch fire. Two arguments against them being houses, seem unanswerable. If they could make such excellent pottery, they would be able to make more satisfactory houses to live in, and if they lived in these stone graves and used their pottery, they would not hide it in an inaccessible place between 4 stone slabs. There was no means of getting at the buried pottery without breaking up the stones which covered it. On the other hand, it is very curious that they should have—as in grave No. 4—left a passage from the one partition to the other, and that in all the graves there should be a small door as it were in the eastern wall.

The expense of making these structures must have been great and it seems to me that they are probably the graves of the chiefs of some prehistoric people. The pots were probably buried that they might be of service to the deceased in his happy hunting grounds—a practice and a belief which I think obtained among the Maoris of New Zealand. The reason for the existence of the door-ways however is still not clear. They are too small to admit of the deceased being buried through them with any decency. He must have been bundled in head first. I should think, if they are graves, that the body would be interred before the top slab was laid on. The holes may have been left from a belief that he would pass in and out thereby after death, and the hole in the partition in the grave No. 4, from a belief if one person were buried in each partition they might like to communicate together. In that case however it would be easier, one

would think, for them to imagine the deceased climbing over the four foot wall than creeping through a hole little more than a foot in diameter.

This same argument applies if living people are supposed to have dwelt in that grave. They could more easily climb the wall than creep through the hole. Then grave or house, for what purpose was the hole? If the people were dwarfs and as the ryots think, only a foot or so in height, it is comprehensible but then they would want a race of giants to build for them. On the whole I do not feel much wiser on the matter than the ryots, some of whom thought the kuris must date from "before the company" while others, referred them to a period before the Kaliyuga.

Since writing my letter 5th June 1890, I have opened another kuri which deserves description. Outwardly before excavation it was a mound of loose stones and earth, some 24 feet in diameter. On the eastern side stood a large upright stone, some 8 or 10 feet high, and all round were visible the tops of a circle of smaller upright stones. On excavation some 3 feet below the ground level was found the usual massive stone slab which roofs the Kuri. As in the other cases this rested on the stones which formed the sides and ends of the grave itself. On excavating all the earth within the stone circle, a clear space was obtained surrounded by a wall of stone slabs some 5 to 7 feet high, the eastern slab being from that level, 12 or 14 feet high. In the middle, or rather to the east, lay the grave. On removing the cap stone, was found a square stone chamber, some 8 feet deep, divided into two compartments by a stone slab as shown by the double line in the plan accompanying. The north compartment was again divided into two by a slab some 3 feet high between which, and the partition wall lay the usual flat shelf of stone. This grave differed from those previously opened in that it was larger and

deeper, and there was no shelf to the southern compartment. Both cells as usual had a small hole in their eastern wall which led—on removing a stone slab, to a front yard as it were also shut in by stones, but not roofed. One curious feature of this grave, was that each of the stone slabs which shut the eastern entrance holes, was held inposition by a heavy block of stone—more or less round and measuring some 2½, by 1½ by 1½ feet.

By the side of the stone block which closed the northern cell, were the remains of an iron spear, much eaten away by rust. A few fragments of pottery, and bones only were found in the mud, no entire pots remaining. In the three-foot partition to the northern cell, was a hole, rising from the stone floor, about a foot, and leading under the stone shelf, which thus formed a sort of cupboard. This feature I have not observed before in any kuṛis and it is difficult to see what purpose it can have served. The use of the large stone blocks to close the entrances seems to dispose finally of the people's idea that a race of pigmies lived in these cells, and passed in and out; for no one—pigmy or full grown—could find his way out against such blockading. To my mind, the kuṛis are beyond doubt graves, dating from time when sun-worship was in vogue. Hence the invariable eastward position. It would also seem that ancestor worship—some early form probably of the present Hindu custom—was practised. It is probable that once a year or on stated occasions the relations of the deceased would visit the grave, and offer libations through the holes in the eastern wall—which would be left for that purpose. Closing them with stone slabs and blocks would effectually keep out wild animals, while leaving them accessible to the relations when required.

The grave was clearly sunk in the ground, and not originally built up and subsequently buried by lapse of time, for we came upon the natural rock some 3 feet below the cap

stone. It was suggested that the name Pandava Kuṛi, is a mistake for Mandava Kuṛi, or hole for the dead—to my mind a very plausible suggestion. There seems also to be a legend, that in ancient times Yaman quarrelled with the other gods, and lost his power of causing death for a time. Consequently people—though they became old and troublesome, could not die, so their relations put them out of the way—on the shelf as it were—in these Pandava or Mandava Kuṛies. Pandava or Mandava they are remarkable enough, and the pottery points to a perfection of the potter's art which we are commonly unwilling to allow to an unknown people in prehistoric times.

On the Fauna of a Madras pond and its Monthly Variations.

(By A. SAMBASIVAN, B.A., Government Scholar, Presidency College, Madras.)

Communicated by Dr. Bourne.

The following notes upon the fauna of a pond in the Chepak gardens have formed the subject of many observations conducted throughout a complete year. The subject was taken up at the suggestion of Professor Bourne, of the Presidency College to whose constant aid and numerous suggestions I am deeply indebted.

The pond is situated in the compound of the house attached to the Engineering College, and has not dried up, nor undergone alterations during the last half-century if one can believe the hearsay evidence of the gardeners.[1] The water is but very slightly brackish although the pond is situated within 300 yards of the sea. My object in these investigations was twofold. In the first place I wished to place on record a complete list of the fauna of such pond and in the second to ascertain how the fauna was affected by the varying seasons, with regard to this latter question I found that some organisms flourished in quantities throughout the year, while some were only to be found during certain, and others though always to be found

[1] It is probably nntrue that it has never dried up within that period, it is certainly absolutely dry now (April 1891) and although this is a period of great drought there have been within the last fifty years other periods of even greater drought. On the other hand it is a pond which is not in the habit of drying up during the hot weather.

became much reduced in numbers at certain periods. I proceed to enumerate with notes the organisms I found and determined.

PROTOZOA.—Rhizopoda, *Amœba*; *Pelomyxa viridis*, Bourne.
Infusoria, *Vorticella*; *Paramœcium*; *Chilodon*; *Euglena*; *Monas* and various gregarines parasitic in other organisms.

These are the only Protozoa which I found so that the group is very poorly represented. One of these forms—*Pelomyxa viridis* is a new species and possesses peculiar interest. I first noticed it lying on the surface of the mud which I had placed in a dish. There were a large number of specimens and they looked like eggs, rounded or oval in shape and greenish in colour. I pointed them out to Dr. Bourne who found that when mounted on a slide they exhibited amœboid movements—the organisms being large enough and these movements rapid enough to be seen with the naked eye. Dr. Bourne has figured and described the organism as *Pelomyxa viridis* and his paper will appear in a forthcoming number of the Quarterly Journal of Microscopical Science. It is therefore unnecessary for me to refer further to it here. Most of the Infusoria were found throughout the year, they do not appear to be affected by changes in the weather and their miscroscopic size and consequent limited requirements are always satisfied by the conditions of the pond so long as any water remains.

Pelomyxa viridis was not to be found throughout the year. I first found it in January 1890 and it was to be found, though in diminishing numbers up till the end of May, from June till the end of October it was not to be found either in the water or the mud of which latter I sifted great quantities through fine sieves. In November and December I saw it again and found a few specimens. Early

in this year (1891) it disappeared, sometime before the pond was completely dried up.

Cœlenterata.—I did not find any representatives of this group. Fresh-water sponges although found in some of the Madras tanks do not occur here and Hydra is not to be found. I believe that Hydra has not been recorded from Central and Southern India at all.[1] It was recorded by Carter from Bombay and is to be found at Naini Tal whence Dr. Bourne has had specimens sent to him.

Turbellaria.—Rhabdocœla, *Mesostomum* sp.; *Microstomum* sp.; Dendrocœla, *Planaria* sp.;

Mesostomum occurs throughout the year. *Microstomum* suddenly appeared in enormous quantities in March and were seen reproducing themselves asexually.

The dendrocœlous form appeared and disappeared at about the same time as (*Microstomum*) but I never found it in great quantity.

Nematoda.—Various free-living Nematodes were to be found at all times.

Oligochœta.—*Ælosoma*; *Nais*; *Pristina*; *Dero*.

I observed 3 distinct species of *Dero*. In February and March all these oligochœta were reproducing themselves asexually. They were most numerous in March and then rather suddenly disappeared, by the end of April very few specimens were to be found, and this state of things continued until August when they rapidly increased in number and abounded during September, October and November. They were not so numerous in December and January. The rapid increase in the spring is due doubtless to the asexual reproduction but I could not find any evidence of sexual reproduction taking place either then or at any

[1] I am informed by Dr. Bourne that he has since this was written found Hydra in a tank in Triplicane.

period during the year. The diminution in numbers of these forms, during the hottest months is easily accounted for as they live for the most part in shallow water, *i.e.*, near the margin so that as the pond dries, as they cannot rapidly shift their *locale*, they perish.

HIRUDINEA.—*Clepsine.* Three or four species of *Clepsine* are to be found in the pond throughout the year but they become most numerous from August—November.

ROTIFERA.—Two or three common species of Rotifera flourished in the pond throughout the year and I observed them in unusually large numbers about the end of April.

CRUSTACEA.—Branchiopoda, 1 *sp.*

Cladocera.—*Daphnia reticulata*; *Moina fischeri*, E. J. Beck; *Microthryx rosea*; 1 *sp. n.*

Ostracoda, *Cypris*; *Cythere.*

Copepoda, *Cyclops.*

I have been unable to find any record of the occurrence of freshwater Branchiopoda in this Presidency. Last year Dr. J. R. Henderson showed me some specimens of a Branchiopod which he found teeming in a pool on the Shevaroy Hills. My species is undoubtedly different from this and I hope to describe it in detail on another occasion. This Branchiopod appeared suddenly in large numbers in our pond during the latter part of August and remained throughout September and was to be found not only in this pond but in many others in Madras.

For the identification of the species of Cladocera I am indebted to Miss. Beck to whom Dr. Bourne sent specimens. I first saw *Daphnia reticulata* in January, *Moina Fischeri* in February, *Microthrix rosea* in April and the fourth species in November but as they were to be found in all subsequent "takes" it is possible that want of knowledge

only prevented my seeing them earlier. Parthenogenesis appeared to be always taking place but I noted sexual reproduction in any of the forms during May to November only.

The Ostracods and the Copepods thrive throughout the year.

ARACHNIDA.—I have found three forms of fresh-water Acarinae in the pond.

HEXAPODA.—Numerous insect larvæ and insects occur in the pond throughout the year and are most abundant during the rainy season.

MOLLUSCA.—Gastropoda, *Ampullaria*; *Planorbis*; *Limnœus*.

These three gastropod genera are all represented but I found no Lamellibranch.

POLYZOA.—I came across a few leaves with an old Polyzoan skeleton upon them but could find no living specimens.

VERTEBRATA.—Little fresh-water fishes and Batrachian larvæ were obtained in large numbers during the rainy season. It will thus be seen that of the various fresh-water groups the only important ones which are entirely absent are the Cœlenterata, Amphipoda, Isopoda and Decapoda.

RESUMÉ AND CALENDAR.

The following organisms were present throughout the year, some of them appearing at one time in large numbers and diminishing at other times but never altogether absent:—Infusoria, *Mesostomum*, *Dero*, *Clepsine*, Cladocera, Ostracoda, Copepoda, Rotifera, *Limnœus*, *Planorbis*, *Ampullaria*, insects and insect larvæ.

JANUARY.—Temperature; Max. 89°—Min. 62°; Weather: fine.

Pelomyxa viridis first seen, *Mesostomum* flourished, *Daphnia reticulata* first seen.

FEBRUARY.—Temperature: Max. 92°—Min. 63°; Weather: fine.

Pelomyxa and *Mesostomum* continued, Oligochœt worms began to reproduce asexually, *Moina Fischeri* first seen.

MARCH.—Temperature : Max. 95°—Min. 72° ; Weather : fine.

Pelomyxa and *Mesostomum* continued, Oligochœta reproducing asexually with great vigour, *Microstoma* reproducing asexually, *Moina* bearing both Ephippial and Agamic eggs, *Planaria* first seen.

APRIL.—Temperature : Max. 104°—Min. 74° ; Weather : fine. Oligochœta began to decline in number, Rotifera abounded, *Microthrix rosea* first seen.

MAY.—Temperature: Max. 109°—Min. 80°; Weather : fine.

Oligochœta very scarce, *Ælosoma* and *Pristina* entirely absent.

JUNE.—Temperature: Max. 103°—Min. 72°; Weather : rainy, cloudy and stormy, rainfall 4·87 inches.

Pelomyxa disappeared, *Dero* and *Nais* very scarce indeed, *Ælosoma* and *Pristina* absent.

JULY.—Temperature : Max. 96°—Min. 73° ; Weather : cloudy and rainy, rainfall 7·2 inches.

The same state of things prevailed as in June.

AUGUST.—Temperature : Max. 95°—Min. 74° ; Weather : cloudy and rainy, rainfall 2·14 inches.

Oligochœta began to increase in number, the species of Branchiopod appeared.

SEPTEMBER.—Temperature : Max. 97°—Min. 75° ; Weather : cloudy, rainfall 2·72 inches.

Clepsine specially numerous, the Branchiopod abounded, enormous numbers of insect larvæ appeared.

October.—Temperature : Max. 96°—Min. 71° ; Weather: cloudy, rainfall 4·35 inches.

The same state of things prevailed as in September.

November.—Temperature : Max. 88°—Min. 67°; Weather: passing clouds, rainfall 3·64 inches.

A new species of *Daphnia* first seen, *Pelomyxa viridis* appeared again.

December.—Temperature: Max. 87°—Min. 72°; Weather: fine.

The same state of things prevailed as in November.

Note on Batrachians.

(By EDGAR THURSTON.)

The volume of the 'Fauna of British India' which is devoted to the Reptilia and Batrachia has been recently [1] issued, and, so far as the Batrachia of S. India are concerned, adds very little to our previous knowledge. It is, in fact, admitted in the preface that many of the characters of the genera and species now published are taken from the Catalogue of Batrachians in the British Museum. The genus *Ixalus* is now separated into *Ixalus* and *Micrixalus*, species of the latter being said to be dwarfed forms of *Rana*, which do not develope vomerine teeth. [2] *Rana gracilis* and *Callula olivacea* of the British Museum Catalogue appear as *R. limnocharis* and *C. variegata*. But little is recorded as to life-habits; and, as a matter of fact, many of the species are known only from one or a very few specimens, and there is no record as to their habits or appearance during life.

Among the few new facts which are mentioned are that *Nannobatrachus Beddomii* is one of the smallest Batrachians known, and that the male of *Bufo melanostictus* (the house toad of Madras) has black nuptial excrescences on the two inner fingers.

The habitats given for some of the S. Indian species, which alone interest me, do not, in some cases, coincide with those recorded in my Catalogue of the Batrachians of Southern India, which was based on the British Museum Catalogue; and the following list contains a comparison of the habitats of some species as given in the 'Fauna of

[1] This note was read before the society in 1891.

[2] *Vide* Boulenger *Proc. Zool. Soc. Lond.* 1888., p 205.

British India and as recorded in my Catalogue, or observed since its publication.

1. *Rana verrucosa.* "Malabar" (*Faun. Brit. Ind.*). Add Nílgiris, where I obtained a single specimen in March, 1889.

2. *Rana limnocharis.*—A very common species on the Nílgiri plateau, which I have seen at Ootacamund, Coonoor, and Kotagiri. In the ponds of the Government Gardens, Ootacamund, it was swimming about together with *Bufo melanostictus* and *Rhacophorus pleurostictus*. The pond at Davison's Hotel, Coonoor, was teeming with the tadpoles of this species in March, 1890.

3. *Rana breviceps.*—The specimens of this burrowing species have been captured by Mr. J. R. Henderson in his compound in Madras during the N. E. Monsoon.

4. *Rana temporalis.*—"Anaimalai Hills and Ceylon." " (*Faun. Brit. Ind.*). Add plateau of the Nílgiris (Coonoor.)

5. *Ixalus signatus*—"Malabar." (*Faun. Brit. Ind.*) add plateau of the Nílgiris (Paikara and Coonoor).

6. *Callula variegata.*—This species lives, together with *Bufo melanostictus*, in the overflow pipe of my bath-room, as well as under flower-pots and in the nests of white ants (*Termites*).

7. *Callula triangularis.*—" Nílgiris, Malabar " (*Faun. Brit. Ind.*). Add Shevaroys.

8. *Cacopus globulosus.*—Previously recorded only from Russellkonda in the Madras Presidency. The Rev. E. Lóventhal informs me that he has seen it, on one or two occasions, at Vellore.

"*On the Stigmatic Opercula in the Scorpion.*"

(By A. VAMAN PAI, from the Biological Laboratory, Presidency College, Madras.)

Communicated by Dr. Bourne.

Last year, Dr. Bourne called my attention to the fact that there is an arrangement connected with the pulmonary stigmata of the Scorpion, by which the animal is enabled to open or close those apertures at will. Quite lately, I have been able to work out the subject more fully under his kind direction.

An apparatus connected with the stigmata of Hexapod-Insects, by which they can be opened and closed has been described long ago.[1] In the Scorpion the walls of the stigmata are strongly chitinised, and consequently cannot be brought together as in insects so as to shut off communication with the exterior. But apart from the fact of such an arrangement having any connection with respiration, it is obvious that the animal would be liable to injury, if the access of foreign bodies to the pulmonary cavity cannot be prevented. The Scorpion has the habit of burrowing in earth and sand. During the monsoons it is frequently submerged in water. It is also necessary to protect the lung-books from noxious gases and vapours and to preserve them from desiccation. Hence it is clear, that it is necessary for the scorpion to possess some means, by which the stigmata can be opened and closed at pleasure.

[1] Huxley's 'Invertebrata' page 375.

Obvious as this fact is, it has hitherto been almost entirely overlooked by naturalists who have directed their attention to the study of these interesting arachnids. The only person who seems to have had any knowledge of the fact that the stigmata can be opened and closed, is Emile Blanchard. He says " les stigmates se ferment et s'ouvrent plus ou moins; ces mouvements sont executes par des muscles . . . . ". But serious doubts have been entertained as regards the accuracy of his observation. Felix Plateau, writing four years back says " on a vu, plus haut, qu' Emile Blanchard parle de mouvements effectués par les orifices stigmatiques. Ces mouvements sont, pour moi, tout ce qu'il y a de plus douteux. Non seulement je n'ai pas réussi à les constater mais Léon Dutour dont les études sur les Scorpions ont été faites avec beaucoup de soin s'exprime ainsi: " . . . . ma plus forte loupe braquée des demi-heures entières sur les stigmates de l'animal vivant et fixé sur le dos, ne m'a jamais permis d'y saisir le moindre mouvement, malgré le soin d'y projeter de temps en temps un rayon de soleil. Mes lentilles, ma patience ont échoué à me rendre sensible ce jeu, ce mécanisme respiratoire. "[1]

Attached to the posterior wall of each stigma, is a plate covered with a thin layer of chitin, which may be called the " stigmatic operculum " In the anterior portion of the operculum, which, when seen with the naked eye looks whiter than the rest, the chitin is thick and peculiarly modified. Viewed under the microscope it appears as a mass of polygonal bodies which look like the cells of a honey-comb. In section, it is seen to consist of chitinous rods, the free ends of which have somewhat the shape of inverted cups. These rods look like mushrooms with long stalks. When the stigma is open, this anterior portion of the operculum is not seen. When it is shut, only half of it

[1] Archives Biologie, tome VII, page 339.

is visible, the other half being overlapped by the portion of the sternum which is in front of the stigma.

The free edge of the operculum is continued into a thin membrane, which, together with a similar one attached to the anterior edge of the stigma, and to the inner face of the part of the chitinous sclerite in front, is joined to the axis of the lung-book. Air passes between these two to the lung-book.

Attached to the stigmatic operculum all along its free-edge, are a series of small muscles which arise from the inner face of the sternum a little behind the posterior edge of the stigma, and have hitherto been undescribed; I propose to call these the "opercular muscles" No muscles attached to the operculum itself, which pull it in the opposite direction, are present, so far as I can see.

How does this apparatus work? When the opercular muscles contract, the operculum is drawn back and the stigma opened. When they relax, the elasticity of the operculum is brought into play, and it is shut. It is possible that muscles attached to the lung-books or to the thin membrane which is continuous with the free-edge of the operculum, may help in closing the stigma. The pressure of the above-lying tissues and organs may also have some effect in this direction.

The curiously modified chitin of the anterior part of the operculum has an important function. When it is applied against the membrane attached to the anterior edge of the stigma in the act of closing the last, the membrane and the soft tissue which lies below it will be thrown into innumerable little projections, which will fit in into the spaces between the chitinous rods. Thus not only is the operculum held on firmly to the anterior edge, but the access of water and other fluids to the pulmonary cavity is rendered impossible.

What is the disposition of the stigmata in the living animal under ordinary conditions? Sometimes they are shut, though generally one or two are slightly opened; sometimes some are shut and some open, more often partially than completely. The opercula often remain for a long time without moving; this accounts for the fact that both Dufour and Plateau failed to observe any movements connected with the stigmata. But these movements do occur. According to Plateau, respiratory movements such as are found in Hexapod-insects are absent in scorpions. But whether this is the case or not, it is desirable for the scorpion to be able to regulate the supply of air to its wants at different times. I think it is very probable that these movements serve that purpose.

But though no movements connected with the stigmata, *i.e.* of the operculum, may be observed even for a long time, it is easy to demonstrate their existence by touching the stigma with the blunt end of a needle or by putting a drop of water on it when it is open. It is at once closed by the operculum. On the other hand, if the stigmata are shut, it is only necessary to hold the scorpion for a minute or two under water; when taken out the stigmata will be found to be wide open. This latter circumstance is a little remarkable, seeing that in the scorpion as in most other invertebrates, metabolism is very slow. The scorpion will live for hours under water or in nitrogen gas; and ordinarily its stigmata are shut for a long time. Perhaps, it only indulges in a sense of freedom from recent restraint.

I tried several experiments with a view to ascertain whether the stigmata would be shut when the animal is exposed to irritating vapours and gases. When placed in ammonia vapour or carbonic acid gas, the stigmata if previously open, do not shut. Dr. Bourne has suggested to me that substances which are irritant in the case of man, may not be so in lower animals. It is possible

that highly irritating and corrosive substances, such as the fumes of nitric acid, will make the animal shut the stigmata. Chloroform seems to produce some effect. But all the stigmata are not completely closed during the whole time that the animal is in it, a state of things which can be observed when the scorpion is put under water. In one instance, I observed in a scorpion which was placed in chloroform vapour, the stigmata which were previously shut, open after a time and remain in that condition, to within a short time of the animal's death. In another instance a scorpion which was in chloroform vapour for 15 minutes was taken out almost dead and put on the table. The stigmata were shut at the time. After a while, they were found to be wide open, the animal being still perfectly insensible and only exhibiting once or twice a slight movement. It afterwards recovered.

To ascertain whether the pectines act as olfactory organs, I tried similar experiments on scorpions in which they had been previously removed. No difference was seen. It is probable that they act as tactile organs. When a scorpion is walking or climbing up the sides of an inclined glass-jar, the pectines may be seen to move about and used like feelers. They possess a great range of movement. When the animal is uncomfortable, as when placed in chloroform vapour or gradually heated, the pectines may be seen moving after the rest of the body is still.

In Thelyphonus, the openings of the two pairs of lung-books are hidden by prolongations of the sterna. Probably, an arrangement exactly similar to that connected with the stigmata of the scorpion, does not obtain. These and other points in the anatomy of that interesting and little-known Arachnid, I hope to be able to determine on a future occasion.

Note on a tour in Mysore

IN 1891.

(BY EDGAR THURSTON.)

I LEFT Madras at the end of February, 1891, for a month's tour in Mysore, with a view to acquiring specimens illus-

ERRATA.

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,,	36 —	10 —	bottom	—	'bilatures'	—	'filatures'
,,	39 —	6 —	top	—	'Belgota'	—	'Belgola'
,,	40 —	2 —	bottom	—	'But'	—	'Cut'
,,	46 —	11 —	top	—	'*Satifolia*'	—	'*Latifolia*'

tiger was starved, and then enticed into a long box, in which there was no room for it to turn round, baited at the far end with meat.

A short journey by train brought me to Channapatna, between which place and Bangalore is the town of Closepet, where I left some of my staff to collect butterflies, lizards, snakes, &c., in the surrounding jungle country. At Channapatna there is a ruined fort, and a big bazár in which several industries and manufactures are carried out. A manufacture for which Channapatna is celebrated is that of steel-wire for musical instruments (Vinas, &c.); and

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[1] The Madras Museum possesses an Albino Bandicoot. An Albino Nílgiri black Robin was shot on the Nìlgiris a few years ago.

that highly irritating and corrosive substances, such as the fumes of nitric acid, will make the animal shut the stigmata. Chloroform seems to produce some effect. But all the stigmata are not completely closed during the whole time that the animal is in it, a state of things which can be observed when the scorpion is put under water. In one instance, I observed in a scorpion which was placed in chloroform vapour, the stigmata which were previously shut, open after a time and remain in that condition, to

jar, the pectines may be seen to move about and used like feelers. They possess a great range of movement. When the animal is uncomfortable, as when placed in chloroform vapour or gradually heated, the pectines may be seen moving after the rest of the body is still.

In Thelyphonus, the openings of the two pairs of lung-books are hidden by prolongations of the sterna. Probably, an arrangement exactly similar to that connected with the stigmata of the scorpion, does not obtain. These and other points in the anatomy of that interesting and little-known Arachnid, I hope to be able to determine on a future occasion.

Note on a tour in Mysore

IN 1891.

(BY EDGAR THURSTON.)

I LEFT Madras at the end of February, 1891, for a month's tour in Mysore, with a view to acquiring specimens illustrative of the arts, industries, natural history, &c., of that Province. The time selected was, as regards temperature, not judicious.

The day following my departure from Madras was pleasantly spent in going over Dr. E. Hultzsch's excellent collection of South Indian coins, and in exploring the Bangalore Museum and Lál Bagh. At the latter the most interesting objects to myself were an Albino Crow [1] and some kittens of the Jungle Cat (*Felis Chaus*). Some time ago one of the tigers in the collection had the operation for in-growing claws successfully performed. In order that the operation might be performed without risk (to the operators), the tiger was starved, and then enticed into a long box, in which there was no room for it to turn round, baited at the far end with meat.

A short journey by train brought me to Channapatna, between which place and Bangalore is the town of Closepet, where I left some of my staff to collect butterflies, lizards, snakes, &c., in the surrounding jungle country. At Channapatna there is a ruined fort, and a big bazár in which several industries and manufactures are carried out. A manufacture for which Channapatna is celebrated is that of steel-wire for musical instruments (Vinas, &c.); and

[1] The Madras Museum possesses an Albino Bandicoot. An Albino Nílgiri black Robin was shot on the Nìlgiris a few years ago.

glass bangles are also made. The processes of steel-wire and glass making are well described by Buchanan in his admirable 'Journey through Mysore, Canara, and Malabar.' I saw a few gold and silversmiths engaged in making various small articles of jewellery. For three annas I purchased a large and representative collection of articles of pottery made out of black and brown clay. These articles, of which many were for sale here and also at Shimoga and Mercara, are very light in weight owing partly to the character of the clay and partly to skilful throwing on the wheel. They are said to be made at a village seven miles from Channapatna and, also, in the Bangalore petta, and consist of rudely ornamented miniature lamps of various patterns, models of native kitchen-ranges, pots, tobacco-pipes which are smoked by the inhabitants, dishes, &c.

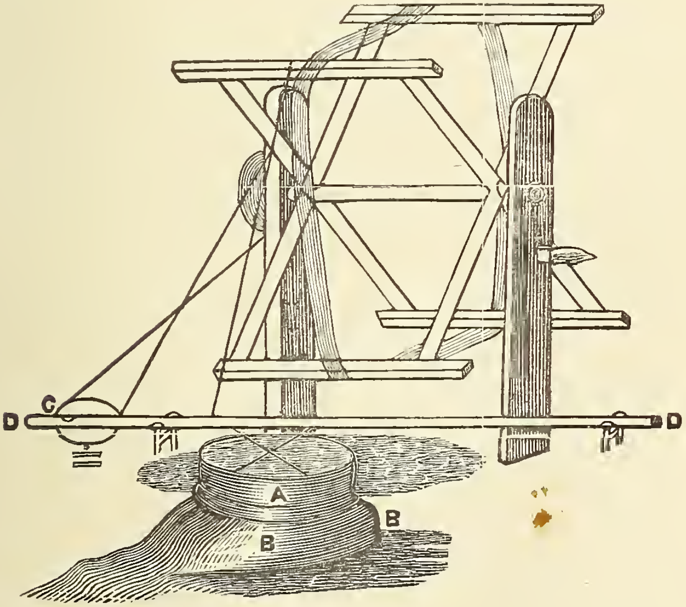
But Channapatna is best known for its manufacture of wooden toys and its silk industry. The toys are made of wood which is lacquered and very brightly coloured and consist of elephants, tigers, spinning tops, bedsteads, birds, fruits, &c., cocoanuts scooped out and painted, figures of Bala Krishna, and masks marked with the trisula on the forehead and mounted as shields, which, though their object is different, recall to mind the devil-masks of Ceylon, whose reputed virtue in curing or warding off epilepsy, small-pox and other diseases is very great. These shields are, I imagine, those which are referred to by Mr. T. N. Mukharji [1] as representing the face of a giant, and being carried by pilgrims to Tirupati.

As regards the silk industry of Channapatna, the silk is obtained from coccoons of the mulberry silk-moth (*Bombyx mori or meridionalis*). The method of unwinding the silk from the cocoons, as carried out at the bilatures of Piedmont, is thus described by Mr. T. Wardle.[2] "A number of coccoons are immersed in an iron pan, in water nearly boiling, with a little alkali to soften them, a semi-rotating brush is placed over them, which quickly catches the exterior fibres of each coccoon, and the more readily enables the reeler to find the windable thread. They are then taken out and transferred to the reeler, who sits leaning over an iron pan, in which she has a few coccoons in hot water, the found ends of several being in one hand. Four or six coccoons, as the case may be,

[1] *Art manufactures of India*, 1888.
[2] *The wild silks of India.*

are being simultaneously reeled into a single thread by the reel at her back which draws off over her head the coccoon threads, they dancing and turning in the water. When a thread breaks, or the coccoon is reeled, another is quickly presented from the lot in the other hand, the manipulation being one of great dexterity." At Channapatna the coccoons are in like manner, boiled in a pan, from which the threads are transferred directly to the reeling apparatus, and no rotating brush is employed.

The reeling apparatus, which is of very rude construction as compared with the machinery used in France and Italy, is thus described by Mr. H. E. Sullivan [1] as the result of a visit to Kingheri near Bangalore. "The native reeling apparatus consists of a small axis working in bearings on two uprights, the motion being communicated from the hand by a winch-handle. Radiating from the axis at each



[1] *Silk in India*. J. Geoghegan, Calcutta 1872 p. 96.

end, within the uprights, are four or six arms of either wood or metal, which are connected at the upper extremities by bars of smooth polished wood or bamboo. This forms the reel. At the opposite end of the axis to that where the winch-handle is fixed, a pulley is attached, which communicating by a band with a rough eccentric, marked C in the sketch, gives a lateral motion to the bar DD. In the centre of this bar, and immediately in front of the basin where the coccoons are steeped, two holes are punched, through each of which a filament of silk (the two crossing each other below) is led on to the reel. The object of the crossing is to free the filaments from the gummy substance present in the coccoon, and to give the silk a roundness; and the lateral movement of the bar distributes the silk evenly on the reel. The silk is separated, according to its quality, into three classes, sold in large quantities, to a local soucar and exported.

From Channapatna I went on by train to French Rocks. The monotony of a railway journey can be relieved, by those who know anything about the birds of the country, by trying to identify all the different birds which perch on telegraph wires, which they use as a fixed station from which to watchfor their food. In the early days of telegraph wires birds used, before they had adapted themselves to the new form of trap, to be frequently killed by striking against the wires. In the same way birds are frequently killed by striking against lighthouses; and, if notes are taken, at different light-houses, of the date of striking and direction from which the bird was coming, data can be obtained for working out the course followed by migratory birds. To my friend Mr. H. R. P. Carter I am indebted for the following list of insectivorous birds, which habitually perch on telegraph wires in Southern India:—All the Swallows and Shrikes, Kestril, red-headed Merlin, black

winged Kite, Indian and blue-tailed Bee-eaters, Indian Roller, white-breasted and pied King-fishers, pied crested Cuckoo, pied Wagtail, jungle and black-headed Mynas, Weaver-bird, spotted and plain brown Munias.

At French Rocks carts were waiting to take me to Sravan-Belgota. The first halt was made at the village of Kikkeri, where the bungalow *Kutwál* pointed out a large tank as good shikár-ground for water-birds. Kikkeri, though a small place, is the seat of a relatively big trade in the manufacture of coarse cotton cloths, the weaving of which I examined, in its various stages, in the streets of the village. The cloths, for which prices ranging from Rs. 3 to Rs. 12, were asked, are not only worn by the inhabitants of Kikkeri, but are sold in other places.

Leaving Kikkeri I started off for Chanráyapatna, a distance of ten miles which, owing to a break-down on the way, took eight hours in accomplishment. The enforced halt was utilised in making a collection of the local rocks from piles heaped up for road metalling. Chanráyapatna as a town possesses nothing of interest except a ruined fort.

There is a large tank, on which natives were catching fish from a boat for the evening meal. Several natives in the bazár were earning a living by the sale of silk[1] obtained from Chennapatna and other places.

From Chanráyapatna a pleasant drive of about 7 miles, through a well irrigated and cultivated country, brought me to Srávan Belgola, the abode of some five hundred Jains, prettily situated between two hills called Chandrabetta and Indrabetta (or Dodabetta and Chikkabetta). A chattram proved a convenient resting place for the night,

[1] Sir G. Birdwood (*Industrial Arts of India*) mentions that silk purses, cords, and tassels, are made largely by the Mahommedans of Sindkurgatea, Narsikus, and Chanraypatna in the Hasan district.

and I was very soon after my arrival surrounded by a crowd of natives inquisitive as to the object of my visit. So well known is the amateur photographer even in this out-of-the-way spot, that it was assumed that I was going to take photographs, and the most popular spot (half way up Indrabetta) was pointed out. Srávan Belgola I was anxious to see with two objects, *viz*: to examine the celebrated Jain figure of Gomata or Gomatesvara and the bastis (temples); and also the local manufacture of brassware.

The colossal figure, which I visited in company with the courteous Amildar of Chanráyapatna, stands on the summit of Chandrabetta, which is reached by ascending several hundred steps cut out of the rock. At the summit we were met by Brahma Sûri Sâstrî, who is referred to by Mr. Lewis Rice as the greatest Jain authority in Southern India. During the ascent of the hill no view of the figure was obtained; but when, after examining the bastis, a certain spot on the summit was reached, boots being removed, a door was opened, and I found myself in full view of it, rising in all its grandeur and simplicity from the back of an open court.

The symbolical lotus and ant-hills at the base, and the branches of the tree (*Ficus religiosa*) turning over the thighs have been described by Mr. Rice who has[1] published a Bowdlerised photograph of the figure. It is also figured by Buchanan, and in the plates illustrating Moor's 'Hindu Pantheon' from a picture in the collection of Sir Arthur Wellesley. But no photograph or drawing can convey an adequate idea as to its size or proportions; and to be realised, it must be seen. But, in all probability, out of the solid rocks, according to tradition before the Christian era,

[1] *Inscriptions at Sravana Belgota.*

it stands, according to most recent measurements, 60 feet high, though its height is given by Buchanan as 70 feet 3 inches. Summing it up in the words of Fergusson[1] "nothing grander or more imposing exists anywhere out of Egypt; and, even there no known statue surpasses it in height, though, it must be confessed, they do excel it in the perfection of art they exhibit."

The visit to Dodabetta completed, and limes, flowers and cocoanuts received, we descended the hill, and, passing through the village, mounted Indrabetta by steps cut in the rock, down which native youths slide by a process analogous to the Alphine *glissade*. On the summit we examined the inscriptions cut in the rock and on pillars; and, shoes being again removed, explored the interior of the Chandragupta busti, one of fifteen bustis on the summit, the walls of which are ornamented with elaborate carvings in black stone.

As regards the brassware of Srávan Belgola, concerning, which Sir G. Birdwood says: [2]"in the Hassan district the Jainas enjoy a monopoly of the manufacture, which employs 1,331 persons, who receive orders from all parts of Southern India", if the best specimens are required, it is essential to have them made to order, as they are not kept in stock. But I was able to purchase a few small and well designed trays on castors, with chased floral ornamentation, at the rate of 1 rupee per sér. A more handsome tray, which I ordered to be made according to the design of a tray which was shown to me, was charged for at the rate of 3 rupees per ser. The man who was to make this tray for me was, unfortunately killed by a cobra before it was completed. A very handsome silver tray was also acquired by me at Srávan Belgola, and was said to have been made

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[1] *History of Indian and Eastern architecture.*

[2] *op cit.*

in the Mysore Province; and this is probable, as its design recalls that of a Mysore gold plate presented to H.R.H., the Prince of Wales, and figured by Sir G. Birdwood[1].

A hunt for coins in the Srávan Belgola bazár brought to light a number of common copper issues of Típú Sultán and Krishna Râja Wodeiyar; and I acquired a double Paisá of Típú in very good preservation. As regards the caparisoned elephant carrying a flag on the obverse of this coin, the following legend was gravely told to me. When Típú was engaged in a battle against the English in Arcot, one of his elephants refused to carry a gun up a hill which was to be stormed, and was only persuaded to do so by a promise from the Sultan that, if he carried the gun, his portrait should be immortalised on the coins. But, unfortunately for the legend, the elephant device on the coins was introduced by Haidar, and simply continued by Típú after his father's death. During the course of my tour a mild numismatic fraud was perpetrated. A leaden coin was shown to me which, at first sight, read as follows:—

Obv. . . . NAC between two stars.

Rev. Plain.

But, on closer examination, the legend resolved itself into COGNAC. The coin was the lead button of a 2 star brandy bottle!

From Srávan Belgola I returned to Chanráyapatna, and went on from there, through an unexciting tract of country, to Hassan, which possesses good official buildings, but has no merit from a curio-hunter's point of view. On the following day the journey was continued, across open moorland with good views and a fresh breeze blowing across the Western Ghâts, to Bélur. Here I found two clever goldsmiths, one of whom was making a handsome pair of ear-

[1] *op cit* pl 10.

rings, and the other a head ornament for an approaching local marriage in high life, of which I ordered a fascimile for 130 rupees. Brass trays and lotas, said to be of local production, were purchased, and silver cups, with no attempt or a very indifferent attempt at ornamentation, were rejected. A sharp native lad piloted me round the magnificent temple of Chenna Kesava, and showed me my ignorance by reading off the Kanarese inscriptions and describing the various sculptured figures—the Haysala king Vishnu Várdana, Chenna Kesava, Bála Krishna, Garuda, Ganésa, Hanumán, Lakshmi, the grim representation of Narasingha eviscerating Hiranyakasipu, etc. The most striking feature of the temple, a full account of which is given by Fergusson,[1] as in the temples at Halebid, is the porch with its elaborately carved windows, and the base with its rows of exquisitely carved figures. The fact is referred to by Fergusson that the succession of figures is always the same, the elephants being the lowest, next above them the shárdúlas (tigers), then the horses, and then the oxen or, sometimes, conventional figures, then birds. "When we know," he says, "the cause of it (this succession), it seems as if this curious selection and succession might lead to some very suggestive conclusion." But at the Kaitabeswara temple (Halebid) I noticed that while, as at Bélur, the base is formed of elephants, these are followed by a row of horses, next above which are the shárdúlas; the birds still forming the topmost row.

From Bélur I marched on to Halebid, once the capital of the Haysala Ballálas of Dvárasamudra, specimens of whose rare gold coinage, bearing the Kanarese legends *Srî-Noṇambavâdi goṇḍani* and *Srî-Malaparolu-gaṇḍa* are contained in the collections of the Madras and Bangalore Museums. Halebid is situated between two hills in a fer-

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[1] *Op. Cit.* Baillûr.

tile plain, and, at the entrance to the village, one is greeted by a well carved figure of Ganésa. There being no rest-house, the night was past, in the company of owls, beneath the shelter of one of the two stone bulls (Nandi), each of which is contained in a large open pavilion. At Halebid there are two temples, Hoysaleshwara and Kaitabeshwara, between and around which are unromantic castor-oil plantations. And in the fields between them is a Jain basti, which would attract more attention were it not swamped by the magnificence of the Hindu temples of these, which were built by the same architect, Jakanatha, and on the same lines of sculpture as the temple at Bélur. The Hoysaleshwara is in good preservation, though many of the sculptured figures of the base are broken, and a luxurious growth of green and white fungi is producing sad disfigurement. The natives, on the evidence of sásanams, say that the temple is 1000 years old; but fact places the building of it in the 12th century. The Kaitabeshwara is in a partially ruined state owing to the dislodging of many of the stones by a Fig tree which took root in the vimanah. This tree is figured by Fergusson, in a wood-cut made from a photograph, with its roots buried between the stones. Lying scattered on the ground are masses of sculptured stones in chaotic disorder, which should be preserved in some museum for the benefit of future generations. But, even in its ruined state, the temple bears testimony to the marvellous skill of the sculptors.

Journeying on from Halebid I went on to Banavar, which consists of a series of scattered villages, one of which is inhabited entirely by native Christians, in an open country in which an abundance of Palm trees of various kinds prevails. From Banavar train was taken to Birur, and from there the distance of 35 miles to Shimoga, through varied hill and junglo scenery, was quickly accomplished by pony

(tattu) transit. The ill-used tattu I have seen recorded, in a manuscript report, in a list of the wild beasts of a District in the Madras Presidency.

At Shimoga the weekly market (shandy) was being held, food-grains and vegetables being the main articles for sale. But the most conspicuous feature were the groups of nomad Lumbadis with their picturesque gipsy clothing ornamented with embroidery and cowries. Gambling was going on in a far corner of the market, natives squatting on the ground and getting very excited over the fate of their pice and $\frac{1}{4}$ anna pieces. Two kinds of gambling board were in action. At one a common die with numbers on its six faces, and mounted so as to form a top, was spun in a metal dish; and, at the other, a ball with numbers marked on facets was spun in a dish, the last struggles of the ball before coming to rest producing tremendous excitement. In both cases the stakes were deposited on a sheet divided into compartments, marked with numbers corresponding to those of the numbers on the die or ball.

At Shimoga an extensive manufacture of bangles is carried out, and, for a few annas, I purchased a series showing the various stages of manufacture from the covering of the glass rings[1] with lac over a charcoal fire to the final ornamentation with tinsel spangles. Specimens were also purchased of household articles made from steatite soapstone and sandstone in the Shimoga District. Similar articles are made from steatite in the Salem and N. Arcot Districts. Through the Deputy Commissioner specimens were purchased, or ordered, of the celebrated sandalwoodcarving made by the Gudigars at Sorab aud Sagar in the Shimoga District. The carved articles consist of boxes, sticks, fans, images of Ganésa aud Kolota Krishna Devam,

[1] The base of bangles consists, as a rule, of lac instead of glass rings.

combs, pen-racks, card-cases, paper-knives, &c. An exquisite specimen of the Gudigar's skill—a box supported on recumbent elephants—is reproduced in autotype at plate 29 of Hawke's 'Photographs of Madras Art Ware.' The Gudigars are, I am told, now working for European Firms from patterns sent from Europe.

From Shimoga I returned, without a halt, to Bangalore, and, from there, went by train to Mysore, where I made sundry purchases from a firm of Muhammadans, Ali Muhammad and Muhammad Makdum, who manufacture well executed articles in "rose-wood" (*Dalbergia Satifolia*) and Ebony inlaid with ivory.

The articles consist of flower-stands, boxes, teapoys, walking-sticks, easels, blotting-pads, cups, photograph frames, watch-stands, pen-racks, &c. Very fine specimens of this inlaid work are to be seen in a door of the Maharája's palace at Bangalore and the doors of Típú Sultan's Mausoleum at Seringapatam. The same firm also make vina-handles carved in rosewood, and copper figures of various Hindu Deities under brass conopies. In the Mysore bázar some quaint specimens of brass-ware were picked up.

From Mysore I proceeded by way of Hunsúr, Periapattana and Fraserpet to Mercara. At Fraserpet, where the Káveri—the home of the otter and crocodile—is crossed, the Coorg Province is entered. The first part of the road from Fraserpet to Mercara, where travellers are sometimes boycotted by elephants, leads through thick bamboo jungle with clearings for coffee, the Plantain, and the "Sago Palm" (*Caryota urens*), the fibre of which is used, in the Madras Ordnance Department, for the manufacture of stable brushes ;[1] the fibre being procured from Ceylon at

[1] Detailed information concerning the fibre of *Caryota urens* for brush-making is given in my 'Hand-book of Commercial Products,' Imperial Institute, No. 12, 1893.

a cost, including all charges, of Rs. 51-6-4 per cwt. The cost of these brushes, as compared with that of brushes made from hog bristles, is just half. Large trees of *Caryota urens* are said to yield for 3-5 months a daily quantity of 5-15 sers of toddy; small trees 1-5 sers for about 2 months. The Madras Museum possesses a single specimen of the longtailed Spiny Mouse (*Platacanthomys lasiurus*) from the Coorg hills. These curious little animals are reported[1] to have a liking for the toddy of *Caryota*, eating through the covering of the toddy pot as suspended, and enjoying themselves. Indeed they have been found half drowned in the pots. On the ghât road gangs of peasants were met, carrying live quails and partridges, and skins of jackals, leopards, red squirrels and rib-faced or barking deer, commonly known as the jungle sheep—a zoological error which is upheld by natives, who call it *bakri*.

Mercara, though delightful from a scenic and (except during monsoon) climatic point of view, proved to be uninteresting from the collector's point of view; the big bazár being mainly devoted to foods, drinks, and cheap articles of European manufacture. Moreover, my collectors were down with fever, and all idea of a zoological expedition among the hills had to be abandoned. Accordingly my steps were speedily retraced, and the return journey to Mysore made with a halt only at Hunsúr.

The most prominent feature of Hunsúr is the manufacture of country carts, to which an entire street in the bazár is devoted. An extensive shoe-making industry is also carried on; and leathern pouches and scabbards for bayonets, metal bells for the necks and horns of cattle, cast by the native process technically known as '*cire perdue*', and coarse woolen kumblis are also made. The wool for

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[1] Jerdon. *Mammals of India.*

these kumblis is said[1] to be made from a strain of the merino sheep, concerning which I learn, from a Bangalore newspaper, "that many years ago the Mysore Government, with the object of improving the quality of the wool, imported a number of merino rams, and maintained a sheep farm at Heringanahalli. It was abolished in 1863, as it failed to answer expectation; yet, in 1876, the good effected was even then apparent in the quality of the wool obtained in that part, which was infinitely superior to that sold in other parts."

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[1] Rice. *Mysore and Coorg Gazetteer.*

Coinage of Travancore.

By Rev. S. MATEER. F. L. S.

Travancore is a Native State on the West Coast of India stretching southwards from Cochin to Cape Comorin. It was originally but a small territory extending from north of Quilon to the Cape, and occasionally into Tinnevelly. It was probably ruled over at various periods from the ninth to the twelfth centuries by the Pandian kings of Madura, by Mysore, or by Tanjore, as each of these states in turn succeeded in obtaining ascendency. The present kingdom rose at the beginning of the fourteenth century. Nearest to Trevandrum the country was divided amongst a race of turbulent chieftains called "the Chiefs of the Eight Districts" all claiming independence but finally subdued by the Rajah of Vénádu or Travancore about A. D. 1730. The kingdom was extended to almost its present limits and consolidated by conquest about the year 1760.

The present population is two and a half millions. The ruling dynasty still retains many primitive usages, especially the strange nepotistic law by which not sons but nephews inherit, through the female line.

As the origin of the native rulers and the kingdom is traditionally traced to the mythical Parasu Ráma and to king Cheruman Perumál of Calicut, it is probable that the coinage was originally introduced from the Zamorin's kingdom of Calicut. The earliest gold coin still in use, the Rási, is attributed by natives to Parasu Ráma. Probably some coins were also imitated from Madura. The earliest date of coinage in Travancore of the gold fanam and the Chuckram and Kásu appears not to be discoverable. Dr

Day says that the Portuguese affirm that on their arrival in Cochin none of the native princes along the coast had the power of coining except the Zamorin.

Within the last thirty years coins of larger denomination have been issued and the workmanship improved by the introduction of machinery from England, so that the currency approximates more and more to the British India ideal.

In the bazars of South Travancore one falls in with coins of Pondicherry, Puducotta, Madura, &c., while in North Travancore and Cochin those of Calicut, Mysore, and Tellicherry are obtainable. In the bazar at Trevandrum are purchasable gold Turkish coins ("Arabi cash") mohurs, pagodas, gold fanams, and sundry others. In the Treasury at Trevandrum a large collection of miscellaneous coins may be found, many of them brought into the country by pilgrims from other parts of India and presented as offerings at favourite temples.

In former times the value of Mohurs, Rupees, and Dollars used in commerce was subject to great fluctuations owing to the devices of the native shroffs in Cochin. The Travancore coinage also was unsettled and fluctuating in its relative value to the British currency; occasionally 30 chuckrams have been obtained for a British Indian Rupee, but more frequently fewer than 28½, the fixed value. The difficulty of obtaining chuckrams at equitable rates is especially felt by the poor; for at times these small coins become very scarce and cannot even be obtained at the Treasury.

Formerly the public accounts were kept in Veeraraya fanams and in Surat Rupees. The rupee was divided into 400 Reis, the small Portuguese currency of former times, but of these no specimens are now seen in Travancore.

The two coins that are in popular daily use are the small copper Kásu or Cash and the silver Chuckram. Coins so

small in value are required by so poor a people, and even a single cash (about half a quarter of a farthing) will purchase a determinable quantity of fruit, tobacco, vegetables, oil, or other cheap commodity. But there must be considerable loss of such tiny coins. British India rupees pass current and are used for large transactions. Silver fanams, equal in value to four chuckrams, and about the size of an English three-penny-piece, were introduced in 1860. Gold fanams, formerly in circulation, were re-introduced about 1881, and a variety of other coins have occasionally been tried for a time. In 1876 the introduction of a double standard by the coinage of Pagodas was attempted, but it proved quite a failure, hardly any circulation of the coins being realised.

Chuckrams being so small and globose are exceedingly troublesome to count or handle. They slip out of the fingers and run over the floor, and are only discovered again with difficulty. £100 sterling amounts (at par) to 28,500 chuckrams weighing 24lbs. Avoidupois; and hours would be wasted in reckoning the number of the small coins. They are therefore measured or counted (like half-pennies in the mint at Birmingham) by means of a "chuckram board", a square wooden plate with hollows the exact size and depth of the coin drilled in regular rows on its surface. A board contains 50, 100, 200 or more of these holes according to convenience. A small handful of coins is thrown on the board and after being gently shaken from side to side so as to cause a single chuckram to fall into each cavity, the surplus, if any, is swept off with the hand. A glance at the board when filled shows that it contains the exact number of coins for which it is intended.

The Mint Department was established in 1790 at Palpanabhapuram, afterwards removed to Trevandrum, then to Mavelikara, Quilon, and Paravoor, and in 1823 it was again at Trevandram. In 1827 it was abolished but subsequent-

ly re-established. Its operations are now conducted within the Fort at Trevandrum.

Silver was formerly procured from Bombay in Rupees, afterwards dollars and other silver coins were bought up. These are melted in clay crucibles, which are each used but once, then ground to powder, and the atoms of precious metal which adhere to the clay remelted and carefully collected. The molten silver is suddenly poured into cold water, where it falls into grains and dust. These are weighed out in delicate scales to the exact weight of a chuckram, and the separate quantities thrown into small cavities in a large earthen plate which contains several thousand holes of the proper size closely arranged on its surface. The plate with its whole contents, being put into the furnace is exposed to a high temperature for three hours and a half so that the grains of metal are fused and formed into separate globules, of which there may be 3,000 on a single plate. When cooled these are taken out and punched by hand into chuckrams, one of the dies being firmly imbedded in a stone underneath the coin and the other die or punch held in the workman's hand. Two men will make 20,000 chuckrams in a day.

For fanam coins good presses with feeding machinery were procured from England and each strikes off 8,000 coins in a day. The acid of tamarind fruit is used for cleansing the coins.

Copper is purchased in sheets and melted in a similar way, but double the time is required for its fusion. The copper globules are partially flattened by a single blow of a hammer previous to the operation of stamping.

The technical mint term "touch", from the touchstone used for testing the fineness, appears to be used to define the proportion of alloy in coins by the number of decimals compared to an integer of pure metal. Thus "8 touch"

would mean ·8 of pure gold or 19·2 carats ; and "$9\frac{1}{4}$ touch" ·925 pure or 22·2 carat gold.

The Malabar Era or Quilon year, according to which dates are found on some of the coins, is supposed to be the date of the foundation of Quilon. The Malabar Era 1069 begins on 15th August 1893.

Counterfeit chuckrams are sometimes common, and I have seen a copper kasu plated with gold.

GOLD COINS.

Gold seems to have been the standard of value and money of account throughout South India, and it was procurable in India itself. It appears to have been the gold coin that was called pańam (corrupted by Europeans into fanam) derived from Sanskrit pana—wealth. Of this metal may be named the following :—

1. *Ananta Varáhan Pagoda.*

   Obv. Vishnu between two lotus flowers.

   Rev. Convex, granulated.

   (Bidie Plate III, 22.)*

   AV. Weight 52·43. Size. 5.

   Coined under Dewan Raja Kesava Das A.D. 1789—1798.

2. *Travancore Varahan.*

   Obv. Conch shell surrounded by wreaths.

   Rev. Centre within wreath R. V. 1877 (Mal.) 1052 above ; round margin, Travancore.

   (Bidie Plate II, 18.)

   AV. Weight 78·8. Size ·7.

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* NOTE.—The references are to descriptions already given of the coins.
Elliot. Coins of Southern India, Numismata Orientalia, by Sir W. Elliot.
Bidie. Pagoda or Varaha coins by G. Bidie, Jour. Asiat. Soc., Bengal, 1883.
Tufnell. A collection of South Indian coins by R. H. C. Tufnell, Jour. Asiat., Bengal 1886.
Weights, in grains; size, in English inches.
Mal., Malayalam : Tam., Tamil; Hind., Hindustani.

3. *Half Varahan.*

Of same pattern as No. 2.

AV. Weight 38. Size ·7.

Nos. 2 and 3 were struck by Maharaja Rama Varma in 1877 and declared a legal tender for Rs. $7\frac{1}{2}$ and Rs. $3\frac{3}{4}$ respectively. This attempt to introduce a double standard into Travancore was not successful.

4. *Token or Medal.*

Obv. Head of Maharaja to right. Margin in Eng. Sri Rama Varma Maharaja of Travancore.

Rev. Arms of the State. Margin in Mal. Sri Rama Varma Maháràja, Tiruvithankur, 1057. Edges milled.

AV. Weight 131. Size ·85. Plate I, fig. 1.

5. *The half of No. 4.*

These Tokens or coins are not mentioned in the State Administration Reports. They seem to have been struck at the private cost of the Maharajà as a memorial of his reign. They are well executed and were struck in Bombay. 5,000 were issued. They are now rarely procurable.

6 to 17. *Tulábhára Kásu,* Royal Weight Token.

Twice during his reign each ruler of Travancore presents his weight in gold to the Brahmans with elaborate ceremonial.

The gold is previously made into coins or, rather, tokens ready for distribution, of four sizes, worth respectively from something like thirteen to about two shillings, an engraving of the largest of which in 1892 issue will be found below.

See Mateer's *Travancore and its people,* pp. 169—175, and *Native Life,* pp. 130 and 388; and Shungoonny Menon's *History of Travancore,* pp. 55—72. On each occasion specimens disposed of by the poorer Brahmans are procurable in the bazar but most are soon hoarded up. This ceremony has been performed occasionally in Travancore from ancient times and by the last eight Rajahs, since 1758, without interruption. The last occasion was on 29th April 1892.

Previous to 1850 no details are available. The last observance before 1850 was in 1829.

6 to 9. *Tulábhára Kasu* of 1850.

Obv. Legend, Sri Patmanábha (the national deity) in Mal. within dotted border.

Rev. Blank.

(Plate in Shungoonny Menon's *History,* p. 72.)

AV. Sizes four, viz ·8, ·67, ·57, ·5.

10 to 13. *Tulábhára Kásu* of 1870.

Obv. Legend Sri Patmanábha in Mal. within wreaths and dotted border.

Rev. Conch shell within wreaths and dotted border Edges roughly milled.

AV. Four, said to weigh respectively 78·65, 39·23, 19·60, and 9·83. Sizes ·94, ·8, ·63, ·5.

Altogether 43,421 tokens were struck.

14 to 17. *Tulábhára Kásu* of 1885.

Same design and weights as Nos. 10 to 13.

18. *Gold Medals or Plates,* value about Rs. 40, irregular in shape, with the figure of Sarasvati, goddess of learning rudely engraven, were presented by the Maharaja to Brahmans who passed examinations in religious rites and formulas.

Plate I, fig. 2.

19 to 22. *Tulábhára Kásu* of 1892.

Design as in Nos. 10—13. See engraving above.

AV.	Weights respectively	72	48	24	16
	Sizes	·8	·67	·5	·43

23 to 27. From unused dies long lying in the Mint at Trevandrum I have been favoured with several interesting patterns struck in silver, some dated M.E. 993=1817-8 and M.E. 1018=1842-3 and A.H. 1236=1818-9. It is remarkable that the half and the quarter rupee and other dies have Hind. legends or dates and also Tamil for South Travancore, where that language is spoken. These may have been tentative efforts at an improved coinage by General Munro (1810-19) or Dewan Vencutrow (1817-22 and 1843-5).

Such are—

23. *Párvathi Mohur, Pattern.*

Obv. Conch-shell in centre. Margin, Mal. Parvathi five rupa Mohur.

Rev. Hind. Mohur panj rupei zarab Parwati (struck) 1236 (1818-9) and underneath, Tamil, Parvathi five rúpáy.

Weight, in silver, 39. Size ·68. Plate I., fig. 3.

Another pattern has above *obv.* repeated on *rev.*

24. *Letchmi Varáhan, Pattern.*

Obv. Letchmi sitting on lotus. Dotted margin.

Rev. Dotted margin enclosing, Tamil, Letchmi Varáhan half quarter. 993 year (1817-8).

Weight, in silver, 33. Size ·8 Plate I., fig. 4.

25. *Letchmi Varáhan, Pattern.*

Obv. Letchmi, goddess of prosperity, within circle and dotted margin.

Rev. Same margin enclosing, Tamil, Varáhan one-sixteenth. 993 year.

Weight, in silver, 19. Size ·56. Plate I., fig. 5.

26. *Patmanábhan Varáhan, Pattern.*

Obv. Patmanábhan reclining on the five headed serpent, with lotus and Brahma issuing from the navel, within a plain circle and dotted margin.

Rev. Solomon's seal with central pellet within an ornamental rayed circle and dotted margin.

Weight, in silver, 14·5. Size ·67. Plate I., fig. 6.

27. *Arukónchakram,* six angle chuckram and shell, *Pattern.*

Obv. Shell and date 1018, dotted border.

Rev. Solomon's seal with central pellet and small circle, within a plain inner and radiate outer circle.

Weight, in silver, 39. Size ·68. Plate I., fig. 7

Another and rather neater pattern has same *obv.* and same *rev.* omitting the radiate circle. *

28. *Rási.*

Obv. A curious emblem called by natives "crocodile tail" with 12 dots above and 2 "legs" below.

Rev. A design somewhat similar to that on the silver chuckram, which see.

AV. Weight 5·75. Size ·57. (Elliot 192).

This appears to have been the principal and earliest coin of Malabar. In Travancore natives say it was minted by the mythical Parasu Rama. Logan in his "Malabar" vol. II., appx. p. 179 says of the Malabar coin, "It has the same 14 dots as the old Víráy fanam. Rasi means a sign of the zodiac, so it is supposed the twelve dots are the twelve signs of the zodiac and the two separate dots the sun and the moon. The twelve zodiacal signs are divided into four good, four middling, and four bad, which may account for

* NOTE.—The above patterns having all been struck in silver I am uncertain whether some of them were intended for issue in gold or in silver.

the appearance of the dots on one side of the coins, the four prolonged dots being the good, the ordinary sized ones the middling, and four tiny dots placed separately in a corner by themselves the four bad signs. The other emblems are not understood."

For a long time past the Travancore Rasi has been an almost extinct and nominal coin but used as the standard in transactions relating to landed property, where it is calculated at 10 chuckrams. It is said to "date from the seventh or eighth century" probably referring to its use in Malabar. Lately recoined in Travancore, it is now procurable at the Treasury.

There are also other Rásis which appear to have been struck by minor chieftains, as Rasi of Valliyil Pulli "Chieftain or house;" and Shara Rasi (Elliot, 189) with same *obv.* and rather different *rev.*

29 *Ananta ráya panam,* Trevandrum rási fanam. Design same as that on the silver chuckram and probably the same dies are used for both.

AV. Weight 5·7. Size ·28.

Ananta is a portion of the name of Trevandrum; Ráya seems equal to rási though it is sometimes corrupted into ráma.

Coined about 1790 by Dewan Raja Késava Das; and in 1881, 10,000 were minted. Horsley in 1839 says it was $=3\frac{1}{2}$ to 1 Madras rupee.

30. *Half Anantarámun panam* or Chinna (little) panam.
Nearly same design as No. 29.
AV. Weight 3. Size ·25.
Issued about 1790 with No. 29.

31. *Veeraráya panam.*
Obv. A curious sign somewhat like a pistol (which also appears on the Cochin coins) with 12 dots above and 2 below.

Rev. Nearly same as *obv.* of silver chuckram.

AV. Weight 5·7. Size. ·325 (Elliot, 190,191; Tufnell 30, 2·4)

Colonel Horsley in 1839 said it was "same value as Ananta raya fanam but different device." The name seems to mean "the noble or superior Rasi." There appear to have been many issues with minute differences in the dies.

32. *Námapanam,* Vaishnava sectarian mark Fanam, is so called from the resemblance of part of the device to the V shaped mark used on the foreheads of Vaishnavites. It seems but slightly different from No. 31. See figures of a number of such coins in Malabar by Captain Tufnell in Jour. Asiat. Soc. Bengal No. 2., 1886.

AV. Weight 5·75. Size ·31.

33. *Kali panam,* Travancore Cullian Fanam.

Obv. Like that of the silver chuckram.

Rev. A right angle and 2 parallel lines with 12 dots above and one between the lines and one in the angle.

AV. Weight 5·5. Size. 325 (Tufnell 3·5) Plate I., fig. 8.

Coined in M. E. 820 (1744·5). Half a century ago it had become very rare but was still largely used in calculation as equal to 4 chuckrams. It has been re-coined and is procurable at the Treasury for 4 cks 3 cash. The name appears to mean "inferior fanam."

34. *Madura Vella Panam.*

Not unlike design of previous coin.

AV. Weight 5·5. Size ·32 (Tufnell 30·8.)

Current in Shencottah.

SILVER COINS.

1. *Travancore Half Rupee.*

Obv. Conch shell within wreath and legend in Mal, Tiruvithankúr half rupa 1064.

Rev. Half rupee 1889 within wreath and legend in Eng. Ráma Vurma Travancore.

Edges roughly milled.

AR. Weight 84. Size ·96. Plate II, fig. 1.

The Travancore nominal rupee of 28½ chuckrams being of less value than the British Indian coin,* which is extensively used, none have yet been struck, but this step is in contemplation. Half and quarter rupees were minted in 1889, about 14,000 of the former and 27,000 of the latter.

2. *Quarter Rupee* of same period.

Obv. As No. 1 but Mal. Kál (¼) rúpá.

Rev. ¼ Rupee 1889.

AR. Weight 41. Size ·8.

3. *Parvathi Half Rupee, Pattern.*

Obv. Hind. 1236 (A.D. 1818-9) Nīm rūpiya zarb Parwati above, and Tam. Parvathi ara (half) rūpāy below, and Tam. 910 ? Dotted margin.

Rev. Hind. as on *obv.* above, and Tam. Parvathi ara (half) rūpā below.

AR. Weight 25. Size ·82. Plate II, fig. 2.

4. *Parvathi Quarter Rupee, Pattern.*

Obv. Conch shell within legend, Tam. Parvathi Kál (quarter) rupá.

Rev. Hind. above AH. 1236 (1818·9) pāō (¼) rupiya Zarab Pārvati and Tam. Párvathi rúpáy——?

AR. Weight 29. Size ·68. Plate II, fig. 3.

5. *Velli Panam,* silver fanam.

Obv. Same device as *obverse* of chuckram within wreath and dotted border.

Rev. Same as chuckram but with Mal. fanam 1. year 1036.

AR. Weight 23. Size ·5. Plate II, fig. 4.

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* NOTE.—30½ chuckrams weigh = 1 British Indian rupee, 180 grains, of which 165 is pure silver and 15 grains alloy. An English florin weighs grains 174·545 of which ·925 per cent. or 161·45 grains is pure silver.

Minted in native style with punch dies. This coin was struck in 1860. The fanam of four chuckrams was till then rather an imaginary coin and the gold kali fanam (No. 33) rare, yet used in all small accounts, chuckrams when counted being calculated in fanams.

6. *Silver Fanam.*

Obv. Same as the preceding surrounded by plain wreath and raised margin slightly milled.

Rev. R. V. with elaborate wreath and raised border slightly milled.

AR. Weight 23·25. Size ·58. Plate II., fig 5.

This more modern and European-like coin was struck two or three years after the preceding, with a stamping press received from England.

R. V. are the initials of the Maharaja Ráma Varma.

7. *Kaliyan Velli Panam,* Cully Fanam.

Device nearly same as that of No. 33, gold kali fanam.

AR. Weight 30, size ·5

This is probably an earlier form of Nos. 5 and 6.

8. *Double Chuckram.*

Obv. Conch shell within circle of dots.

Rev. Solomon's seal with legend, Tam. Patmanábhan and dotted circle.

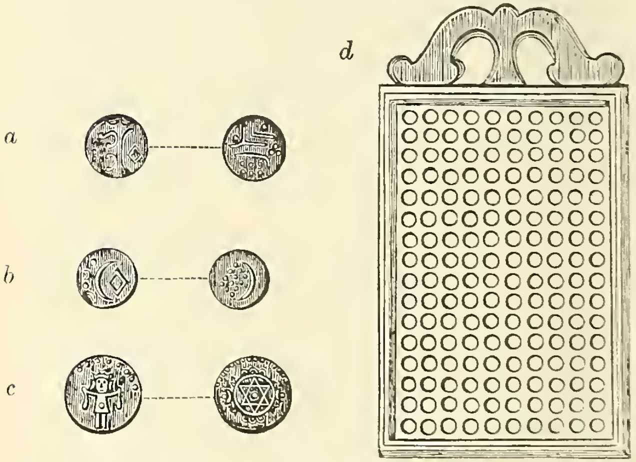
AR. Weight 12. Size ·33. (Elliot, fig. 196).

These coins were issued in 1810, but immediately discontinued.

9. *Chuckram.*

Obv. The device so familiar on the chuckram and the silver and gold fanams, consisting of a small square figure above a horizontal crescent-shaped line, and underneath two vertical curved lines with dots between them, has been explained by Logan as above (Rási) with reference to the twelve signs of the zodiac. In Travancore,

however, the explanation given by natives refers the symbol to the navel, legs, and toes of the tutelary deity Patmanábhan, whose name means "the lily-navelled," referring to the image of the god with the sacred lotus proceeding from the navel, from which flower the creator, Brahma, issues. This explanation seems very probable were it not that in the chuckram, and generally, the device contains 10+2=12 dots. On more recent coins, however, as the silver fanams, the dots are 8+2=10, possibly adopting the popular modern allusion and altering the number of dots accordingly.



Chuckrams, cash, and chuckram board.

Rev. Twelve dots over crescent line with floreated branching lines and right angles, and 3 or 2 dots underneath as in No. 5. The chuckram being too small to receive the complete design, it is only seen to advantage on the fanam.

AR. 30½ chuckrams being in weight equal to a

British rupee, the chuckram weighs nearly 6 gr. Size ·25. (See engraving above, from Mateer's *Travancore and its People*. p. 110.)

The chakra (Sans. discus or wheel) is the emblem or weapon of Vishnu, whose form as Patmanábhan is the national deity of Travancore. This is a very early and characteristic coin of this State and was, at times, current even in Tinnevelly.

"In the British rupee 165 gr. are pure silver and 15 gr. alloy=$91\frac{2}{3}$ per cent. fine. The chuckram is 94·53125 fine per cent. or nearly 3 per cent. better than the rupee, so that the established rate of exchange ($28\frac{1}{2}$=1 Rupee) is nearly 4 per cent. less than a fair equivalent."

There must have been many issues of the chuckram, but I have seen only one device, which seems quite typical of the State. This however occurs in two or three slightly differing forms.

10. *Chinna Panam*, half chuckram.

Same design as the double chuckram.

AR. Weight 3. Size ·23.

Issued in 1810 and now out of use. They are too small for convenient handling.

COPPER COINS.

1. *Eight Kásu* or Cash.

Obv. Conch shell with Mal. ara (half) chuckram within circle of dots.

Rev. Solomon's seal enclosing star of eight dots and 12 dots in the angles, and within circle of dots.

Æ. Weight 39. Size ·6. Plate III., fig 1.

From Dr. E. J. Waring's collection. Old coinage and inferior workmanship.

2. (Current) *Eight Kásu,* half chuckram.

Obv. Conch with Mal. ara (half) chakram within circle and dotted margin.

Rev. Solomon's seal within ornamented circle with dotted margin.

Æ. Weight avg. 80·5. Size ·625 to ·775. Plate III., fig 2. Coined in 1064 (1888-9) and now current.

3. *Four Kásu.*

Design as in No. 1. and same period apparently.

Æ. Weight 34; size ·6. Plate III., fig 3.

From Dr. Waring's collection.

Old. Apparently same period as No. 1.

4. *Four Kásu.*

Obv. Conch in dotted circle.

Rev. Checker lines.

Æ. Weight 44·5; size ·52. Plate III., fig 4.

Old coinage.

5. *Ananthan Four Kásu.*

Obv. Vishnu námam (see under No. 32 gold) with Tam. date 911 within circle and dotted margin.

Rev. Five headed serpent coiled (Ananthan) with Tam. Kásu 4 within circle and dotted margin.

Æ. Weight 37. Size ·6. Plate III., fig. 5.

From Dr. Waring's collection.

6. (Current) *Four Kásu.*

Obv. Human figure with two pendents from the hands.

Rev. Solomon's seal within ornamental circle and dotted margin.

Æ. Weight 39·75. Size ·56 (Elliot 197).

Coined in 1064 (1888-9) like No. 2 and now current.

7. *Ananthan Double Kásu.*

Obv. As in No. 5 but date 975 (1799-1800).

Rev. As in No. 5 but Kásu 2

Æ. Weight 18. Size ·4.

8. *Double Kásu.*

Obv. Conch within circle, margin dotted.

Rev. Appears to be a conventional conch chiefly of dots, small circle, and two curved lines, within circle and dotted margin.

Æ. Weight 17·5 ; size ·48. Plate III., fig. 6.

From Dr. Waring's Collection.

9. (Current) *Double Kásu.*

Obv. Human figure (Vishnu) standing, crowned, two pendents from the hands, Mal. 2 underneath, margin dotted.

Rev. Solomon's Seal ornamented. Dotted margin.

Æ Weight 17·75. Size ·425. Plate III., fig. 7.

Same period as Nos. 2 and 6.

10. (Current) *Kásu.*

Obv. Degraded representation of human figure, said to represent Vishnu, standing crowned, two pendents from the hands. Or might it be four arms of Vishnu?

Rev. Solomon's seal within circle and ornamental bordering, margin dotted, but the whole design is too large to show on a single kásu.

Æ. Weight 9·6. Size ·36. Plate III., fig. 8.

The term kásu, like pana, rási, and chakram, is Sanskrit, indicating that the refinements of coining and arithmetical calculation came from that quarter. Europeans mispronounce it "cash" and the same term was applied by the Portuguese to the small money of other foreign nations, especially the Chinese.

The previous issue of single kasu, showing trifling differences, will be seen in *c*, in the engraving on p. 62. A considerable variety of old kásus are found, with some of which we close this enumeration.

11. *Kásu.*

Obv. Squatting figure (Vishnu), crowned, with flower in each hand, within circle and dotted margin.

Rev. Conch within circle and dotted margin.

Æ. Weight 8·75. Size ·36. Plate III., fig. 9.

Before the present coinage.

12. *Kásu.*

Obv. Appears to be preceding squatting figure with date underneath, 1005 (1829-30) within circle, margin dotted.

Rev. Conch within circle, dotted margin.

Æ. Weight 8·8. Size ·36. Plate III., fig. 10.

13. *Ananthan Kásu.*

Obv. Vishnu námam with Tam. date 911 underneath in circle ; dotted margin.

Rev. Five headed serpent with Tam. Kásu 1 under, in circle ; dotted margin.

Æ. Weight 8·5. Size ·36.

Same period and style as Nos. 5 and 7.

14. *Kásu.*

Obv. Conch, margin dotted.

Rev. Solomon's seal with pellet in centre, dotted margin.

Æ. Weight 10. Size ·36. Plate III., fig. 11.

15. *"Latchmi and Narasimha" Kásu.*

Obv. Indistinct—An animal (?) in circle, dotted margin.

Rev. Double trident with 2 dots, in circle.

Æ. Weight 9. Size ·36. Plate III., fig. 12.

Is this a Travancore coin ? The name was supplied by one of the mint people.

16. *Kásu.*

Obv. The Tamil ஆ ā in circle.

Rev. Degraded conch in circle; dotted margin.

Æ. Weight 12. Size ·36. Plate III., fig. 13.

Said by natives to be perhaps a century and a half old. Is this a true Travancore coin, possibly intended for the Tamil speaking part of the State near Cape Comorin?

Travancore Money Table.

Copper	...16	Cash...	=	1 Chuckram.
Silver	... 4	Chuckrams	=	1 Fanam.
	7	Fs. or 28 Cks.	=	1 Trav. Rupee.
	28½	Chuckrams	=	1 British Rupee.
Gold...		Kali panam, (No. 33)	=	4 Ck. 3 Ka.
		Chinna panam (No. 30)	=	5 Cks.
		Náma panam (No.32)	=	5 Cks.
		Vella panam (No. 34)	=	6 Ck. 12 Ka. or $4\frac{5}{7}$ to = 1 Brit. Rupee.
		Veeraráya panam (No. 31)	=	7 Cks.
		Ananta ramen panam (No.29)	=	9 Ck. 3 Ka.
		Rási (No. 28)	=	10 Cks.
		Trav. Varahan (No.2)	=	Fanams 52½.

An account of the Antiquities of Mukhalingam and its neighbourhood.

BY GIDUGU VENKATA RAMAMURTI.

The omission of the important antiquities of Mukhalingam in Mr. Sewell's *Lists* led me to visit the place which I examined on the 15th and 16th of January 1893 as well as my time and knowledge permitted. The following short account which I give from the notes that I took then, does not pretend to be either complete or quite accurate. It is a place which should be examined by competent scholars whom it is my object to induce by this account to go there. Educated Hindûs have some facilities which foreigners have not and are, therefore, in a position to help the Government, which has been taking a good deal of interest in archæological researches, by bringing to its notice at least the existence of antiquities in out of the way places. With the help of Dr. Burnell's *South-Indian Palæography* and Mr. Sewell's *Lists of Antiquities* much useful work can be done by Hindûs, who are entitled to enter any temple, and can examine the inscriptions and other curiosities even in the interior of the sanctuary. There are inscriptions on isolated stones, on temples, and on copper plates scattered here and there, and some of them have not yet been examined. It behoves the educated gentlemen of Ganjâm and Vizagapatam particularly to work in this direction as far as they can; because they live in the heart of what was once one of the most important and ancient of

the kingdoms of India,—the famous Kalinga country, of whose history so little is known that it reflects on their patriotism and love of research. Mr. Sewell says in his *Antiquities of the Madras Presidency* :—

"We have still a great deal to learn about the sovereigns "and princes of Kalinga ; for though it is certain that "they were powerful and independent sovereigns at a very "early stage of the history of Southern India, as yet we "know nothing of their names.

"The people and the reigning house of Kalinga are "alluded to in the oldest extant chronicles of India and "Ceylon and were known equally to the classical writers "of Greece and Rome and to the inhabitants of the far "East. They appear to have been hardy and adventurous "traders by sea to distant countries. The oldest Buddhist "legends speak of the Kalinga monarchs as the rulers of a "civilised country."—*Vol. II. p.* 183.

Again, "The kingdom of Kalinga was one of the "oldest in India. Though not actually mentioned by name "in the Ṛigvêda, the sage Kakshîvat is alluded to, and "he was the son of a female slave of the queen of "Kalinga. The country is mentioned in all the most ancient "chronicles. According to Buddhist legends, when Bud-"dha's relics were divided at his death, Brahmadatta, the "king of Kalinga, obtained his left canine tooth . . . . .In the "time of Aśôka (B.C. 250) the country was of sufficient "importance to justify that king's engraving his cele-"brated rock-edicts there for the enlightenment of the "people. Pliny divides the country into three portions, "Kalinga, Madhya-Kalinga, and Mahâ-Kalinga. With all "this, very little is known of the names of the kings who "reigned over the country, except through native chronicles, "which are very untrustworthy."—*Vol. II. p.* 258.

Mukhalingam is a noted place of pilgrimage in the Parla-

10

kimedi tâluk, Ganjâm district. It stands on the left bank of the Vaṁśadharâ at a distance of about 20 miles from the town of Parlakimedi. If the modern temple of Hanuman is left out of account, there are only three temples of importance to be seen there, of which one is kept in good repair and richly endowed by the Zamindar of Parlakimedi. These are all dedicated to Śiva. As will be explained below, one of these temples was built in the beginning of the ninth century. There is a *Kshêtramâhâtmya,* a book lately printed, describing the sanctity and importance of the place, according to which, and in popular estimation, that tract of country is as holy as Benares. Thousands of pilgrims from far and near visit it annually on the Śivarâtri, the 29th day of the month of Mâgha, when sanitary arrangements are made by the Deputy Tahsildar of the tâluk under the orders of the Government. The *Kshêtramâhâtmya,* though for the most part an untrustworthy mythological account, may still serve as a guide to the various places of interest to be seen there, and it contains some facts which throw light on the history of the place. I regret that I had not read it before visiting the place or when I was there; else I would have noted some more things of importance.

2. The temples and the inscriptions on them and the several ruins scattered around are all of a very high antiquity, making the place interesting and well worthy of a visit by all students of archæology. Till I went and read some of the inscriptions, the inhabitants believed that they were the writings of the gods which men could not understand, and thus deluded themselves and the pilgrims that visited the temples.

3. The points of interest that I have noted will be briefly noticed in the following order:—

I. The temple of Mukhalingêśvara.

II. The temple of Bhîmêśvara.
III. The temple of Sômêśvara.
IV. Ruins of old temples, &c.
V. The Padmanâbha Hill.
VI. Old coins.
VII. Old forts in ruins.
VIII. The Kâlingas.
IX. A stone inscription and a linga at Teligipêṇṭa.
X. Copper-plate inscriptions.

4. (I.) *The Mukhalingêśvara temple.* The idol is called Mukhalingêśvara, because the *linga* has what is called a face carved on it, or because (as the *Kshêtramâhâtmya* explains) it is *the* linga, the first and the most important of the ten million *lingas* that are supposed to be there. The village is now called after the idol, but formerly it bore the name of *Jayantapuram.* The inscriptions on the walls and pillars of the temple refer to the idol as *Madhukêśvara,* a name which, the *Kshêtramâhâtmya* says, applied to the god as he manifested himself in the trunk of a *madhuka* tree.

5. The central shrine (*garbhakôvila*) is a narrow room with a high conical top, to which is attached a small *maṇḍapa* or hall, the terrace of which is supported by only six pillars of stone, without capitals and without any carvings, three on each side, surrounded by a stone wall at a distance of about six feet from the pillars. The gateways of the *maṇḍapa* and the *garbhakôvila* open to the east in the same line. The *maṇḍapa* has another gateway to the south, near the *garbhakôvila.* The outer walls of the *maṇḍapa* have sculptured figures carved on them, representing various deities, which are of chaste design. The exterior of the *garbhakôvila* has perhaps likewise sculptured figures on it; but a thick coating of plaster now covers all. All round this edifice is a spacious courtyard, containing some

eight or nine small temples, enclosed by a *prâkâra* with two gateways, the principal one, called *Siṁhadvâra*, in the east opening into the street in a line with the gateways of the central structure, and the other in the south. Between the *Śiṁhadvâra* and the entrance into the *maṇḍapa* is a small vestibule, the gateway of which is surmounted by a frieze representing a scene in the *Kshêtramâhâtmya* how the god *Śiva* revealed himself to some *Savaras* who had before been *Gandharvas*, but cursed to be born as *Savaras* —a wild aboriginal tribe, by which that part of the country was probably inhabited. There are some *Savaras* living at present on hills near Mukhalingam. It is to be noted that like the Orissan god *Jagannâtha, Mukhalingêśvara* has his origin connected with the *Savaras.*

From the information that I have received regarding the religious customs of the *Savaras*, I may say that they do not generally indulge in the worship of blocks of stone or wood, as their neighbours, the *Khonds*, are said in the reports of Macpherson and Campbell to do. But it must be stated that once or twice in a year the *Savaras* celebrate a festival during which the inhabitants of each village go in a procession to a neighbouring hill, bring from it a big cylinder-like stone to their fields, and fix it in the ground there. To this block of stone they present some offerings of fruit and even sacrifice fowls and goats. The feast being over, it is left alone and is no more worshipped; a fresh block is brought the next time. Can this *Savara* fetich be the origin of that Hindû idol of *Śiva*?

6. The idol in the main temple is not as attractive as many that could be seen in other places. Emblems of *Śiva* are almost everywhere mere cylindrical blocks of stone; but this Mukhalingêśvara is a piece of unpolished, rough, broken stone. The *Kshêtramâhâtmya* is full of miracles said to have been worked here, attesting the sanctity of the

god. There is in the *Garbhakôvila,* a big earthenware basin, to store water in for washing the idol; the basin being wider than the entrance of the *kôvila,* a myth was manufactured by the priests. A devout potter brought the basin to the temple as a present to the god, but it was too wide to be taken in. The grief of the votary moved the god, and the basin was miraculously transported into the *kôvila* behind the idol. With this and similar accounts relating to the idol the clever priests work on the credulity of the pilgrims. The fact is, the depth of the basin is not more than the width of the gateway.

7. What attracts the attention of a careful observer, is the number of the inscriptions on the pillars and gateways of the temple It is a pity that many inscriptions are hidden under a thick and strong coating of plaster, which cannot be removed without the permission of the Zamindar of Parlakimedi to whom the village and the temples there belong. Only some eleven inscriptions are visible where the plaster has come off. All of them record private gifts of lands or money to the god *Madhukêśvara* (the former name of *Mukhalingêśvara*); while five of them refer to *Anantavarmadêva* as the king during whose reign the gifts were made. The characters are *Eastern Chalukya,* transitional, of the eleventh century. The following are the eleven I have noted.

One on the southern gateway of the *prâkâra* in *Bengâlî Nâgarî* characters, which I could not read.

Two on the southern gateway of the *maṇḍapa,* one of which is dated in the Śaka year 1100.

One at the gateway of the *Âsthâna-maṇḍapa,* dated in the Śaka year 1004 in the reign of *Anantavarmadêva.*

One at the gateway of the *maṇḍapa,* Śaka year 1095.

One on the 1st pillar of the southern row near the idol, Śaka year 1042 in the time of *Anantavarman.*

Three on the wall of the store room near the *garbha-kôvila*, one of which is in *Nâgarî* characters.

One on the southern wall of a small temple to the north-east of the main temple. The characters belong to different types. The inscription does not appear to be a complete one. The slab probably belongs to an older temple, from the ruins of which it must have been brought there.

One on the eastern wall of a small temple adjoining the above, similar in style and likewise incomplete.

8. (II.) The *Bhîmêśvara temple.* This is situated some 200 yards from the *Mukhalingêśvara* temple. All the outer buildings have disappeared, the *garbhakôvila* and the *maṇḍapa* alone being now in existence. It is more or less similar in structure to the preceding temple. The *linga* is a big cylindrical, polished stone, called *Bhîmêśvara* after the famous *Bhîma* of the *Pâṇḍava* dynasty who is said to have placed it there. But all the inscriptions there prefix the word "*Aniyanka*" to the name, making it *Aniyanka-Bhîmêśvara.* The etymology of the word is not known. I have noticed some eleven inscriptions on this temple in characters similar to those noticed above, latest Eastern Chalukyan. Six of these refer to Anantavarmadêva.

Three on the front gate, dated Śaka years 1107, 1064, and 1014 respectively; the 2nd referring to *Anantavarmadêva.*

Two on the gateway of the *garbhakôvila,* dated Śaka years 1020 and 1022, during the reign of *Anantavarmadêva.*

Two on the southern gate of the *maṇḍapa,* Śaka years 1110 and 1093.

Three on the first pillar of the *maṇḍapa,* in the southern row towards the front gate, one of which I could read. It is a Sanskrit *ślôka,* recording a private grant in the Śaka year

1062, expressed by the numerical words "*nayana*, (2) *rasa*, *viyat* (3), *chandra* (1)."

One on the second pillar, containing a Sanskrit *ślôka*, and one or two on the opposite pillars, but worn out.

9. The dates and the reigning years of *Anantavarmadêva* given in the inscriptions on the two above-mentioned temples do not all tally with one another. But I did not examine them critically when I was at *Mukhalingam*, and my notes therefore require to be verified.

10. I may here remark in passing that in deciphering old inscriptions, one has very little trouble in the case of Sanskrit ones. When the language is a vernacular it requires much more patience and ingenuity to work at them. I cannot say that I could understand every word of the Telugu inscriptions. They offer some curiosities to be noted by a Telugu philologist. Some of the Telugu words and forms seem to have now become obsolete. గంగకఱుత was formerly used to mean the bank of the Ganges. గోఱియ was perhaps some unit of land-measurement. నేంటి and నేండు (=to-day) were probably in popular use 800 years ago, as రాంగా, పోంగా now are in some parts. The nasal in the middle of the words is now dropped in pronunciation, but can be recognised in the semi-*anusvâra* substituted by the learned in writing. Orthodox Telugu paṇḍits do not allow that the semi-*anusvâra* after a long vowel represents the older full *anusvâra* sounds. I have met with such words as డాఁడికూంద్లులు, which are now written by the learned thus: వానికూఁతులు but which are in colloquial usage వాడికూతురు. I have not seen Mr. Seshagiri Sastri's recent publication on the Ardhânusvâra, but I expect such instances are noticed and commented upon by him.

11. (III.) *The Sômêśvara temple.* This is situated at a distance of more than two furlongs south of the village. One peculiarity of this temple is that it opens to the west,

while the other two open to the east. Of what seems to have once been a vast building by the evidence of the stone debris there, there now remains only the *garbhakô-vila*. Even this is now in a dilapidated condition owing to a recent stroke of lightning which has shattered a part of the *âmalaka* or top. But its structure, even as it now stands, commands our admiration. It is a curious piece of architecture such as is rarely to be met with. The whole temple is constructed of loose sculptured stones, arranged skilfully one upon another without any cement whatever, resembling a 'kindergarten' toy-temple built of loose slabs prepared for the purpose. The style is Orissan. Everything here is skilfully executed. The carvings are all of exquisite workmanship and elaborately ornamented. The figures, representing various deities of the Hindû mythology, are excellent specimens of Hindû sculpture, tastefully executed, graceful in form, and chaste in design. Each of these deities occupies a splendidly carved cell or niche standing in bold relief; in some cases it is a monolith, in others it is formed of loose stones fitted into one another. The forms of these niches are various, triangular, circular and so on. The gateway is surmounted by an excellent frieze, representing the *Navagrahas*, the nine Hindû planets—very beautiful figures. The *linga* called *Sômêśvara* after *Sôma*, the Moon, who is said to have brought it there, is, like *Bhîmêśvara*, a thick stone cylinder. I could see no traces of any inscription when the morning sun was shining behind the temple, but the evening rays falling on the interior walls of the *kôvila* showed to me indistinct marks of what might be supposed to have been inscriptions. The general appearance of the temple is dark and weather-worn, and I presume that it is the oldest of the three I have noticed.

12. These three temples are more or less similar in form to those of Orissa, illustrated in Hunter's *Annals*.

13. (IV.) *The ruins of old temples, &c.*—A casual visitor, the moment he sees the place, will not fail to be struck by the number of idols, sculptured figures, and carved stones scattered over the village and its neighbourhood. The inhabitants of Mukhalingam do not need to burn bricks in a kiln or cut stone from a quarry. They have only to dig a few feet in their farms or compounds, and a plentiful supply can be had ready for use. The whole quantity of stone required for the construction of a very deep well recently dug in a Brâhman's compound was thus obtained. The bricks that are excavated are of extraordinary size, 3 feet by 2 feet. Sometimes huge slabs of stone are found jointed by strong iron nails driven deep into them. Where-ever one stands, one sees a brick or stone debris. Among these remains, either blocks of cut stone or carved figures are noticeable all along the way from Mukhalingam to Nagarikatakam, a village two miles southwards, where a temple is now under construction over a *linga* dug out by a cultivator, and among the materials which were likewise dug out I saw carved stone figures, monoliths as tall as a man. I was told by a Brâhman at Mukha-lingam that he saw some inscriptions on the stone slabs now lying buried in a field. I tried to get them dug out, but a green crop growing on the spot prevented me. I have myself seen an inscription in old Nâgarî characters on a slab which a *Maṭhâdhikâri* placed under the door-frame of his house. I could neither read it nor take a copy of it, because of the inconvenient position in which it was placed. These facts are, I think, sufficient to prove the former existence of numerous old temples in Mukha-lingam, which, all things considered, is entitled to boast of a high antiquity.

14. I may pause here a little and inquire into the age and history of these temples, for which ample materials are

supplied by the *Kshêtramâhâtmya* as well as by the inscriptions on the temples, and some copper-plates. As I believe that no such inquiry has yet been made inasmuch as the very existence of these temples has not been brought to the notice of archæologists, it is desirable that I should state here the facts that have enabled me to come to the conclusions that I have arrived at.

15. The following account of the origin of the temple is condensed from the *Kshêtramâhâtmya*. *Brahmâ*, the creator, who is deprived of his divinity, goes to *Mahêndragiri*, a mountain in the Kalinga country, a cursed tract, unworthy to be the abode of an *Ârya*. He undergoes there a severe penance. *Śiva*, who is pleased with his austerities, offers a boon. *Brahmâ* requests him to sanctify the Kalinga country by his presence on the bank of the *Vaṁśadharâ* river, to which *Śiva* assents. The Fates so contrive that certain *Gandharvas* are cursed by *Vâmadêva*, for an act of youthful indiscretion with the *Savara* women, to be born as *Savaras*, but they are to regain their former status on seeing the divine form of *Śiva* which is in time to be revealed to them. So the *Gandharva-Savaras* live in the forest of *madhuka trees*, to the west of the Mahêndra Hill, on the bank of the *Vaṁśadharâ*, near the city of *Jayanta*. The Savara chief has a wife and a *Śaiva* concubine of *Śrîśailam*. The two women quarrel for a *madhuka tree*, which the chief cuts off; when lo! the divine light of *Śiva* issues forth from the hollow of the broken trunk...... ......*Brahmâ*, *Vishṇu*, and all the gods come to glorify the event. *Brahmâ* brings there ten millions of *lingas*. *Viśvakarmâ* builds beautiful temples of gold and gems. In course of time (the book says in a prophetic strain) as the *Kaliyuga* approaches, the gold and gems of the temples will be stolen and the god will be without any shelter; when a king of *Kaṭaka*, a descendant of *Vishṇuvardhana*,

belonging to the *Ganga* dynasty, by name *Madhukarṇa-Gajapati* will rebuild them, and *Śiva* will send a shower of gold to provide him with funds.

16. Such is the outline of the main story; but there are episodes in which some references are made incidentally to the places in the neighbourhood. The *Padmanâbha Hill* is mentioned as the abode of *Vishṇu*, as also is *Sumantapuram*, to a merchant in which, the wives of the *Savara* chief used to sell *madhuka* flowers. All the physical features and places referred to in these accounts can now be identified.

17. And what do the inscriptions on the temples say? The earliest dated inscription that I saw and could read was one engraved during the reign of *Anantavarmadêva* in the Śaka year 1004 (A.D. 1082). This only shows that the temple was in existence more than 800 years ago. But there are some inscriptions which I could not read on the spot, evidently in older characters, pointing to a higher antiquity. The temples of *Mukhalingêśvara* and *Bhîmêśvara* seem to have been in a flourishing condition during the reign of this *Anantavarmadêva*. There are several inscriptions there, referring to him as the reigning king, the latest of which is dated in the Śaka year 1062; all recording grants of land or money to the gods *Madhukêśvara* and *Aniyanka-Bhîmêśvara*. Dr. Fleet published in the *Indian Antiquary*, vol. XVIII., pages 161-176, three inscriptions, Nos. 178, 179, and 180, all recording grants of *Anantavarmadêva* in the *Saka* years 1003, 1040 and 1057. These inscriptions contain valuable genealogical and historical information, from which it may be determined when and by whom the temple of *Madhukêśvara* was built. *Anantavarmadêva* was the son of king *Râjarâja* who ruled *Kalinga* for eight years. This *Râjarâja* married *Râjasundarî*, a daughter of the *Chôḷa* king, after obtaining

victory in a battle with the *Dramilas*[1] and subjugating *Vimalâditya*, king of *Vêngî*. *Râjarâja's* son *Anantavarma-Chôḍagangadêva*[2] was crowned in the *Śaka* year 1000 (current), month *Phâlguna*, *Śukla* 3, Saturday; corresponding to 17th February, A.D. 1078. Previous to A.D. 1118, he seems to have invaded *Orissa*[3] and *Vêngî*. From the large number of inscriptions on stones scattered all over the Ganjâm and Vizagapatam districts, it is evident that he was a powerful ruler in his time, holding sway over a large tract of country, perhaps almost the whole of the prehistoric monarchy of *Kalinga*. There is reason to believe that this *Anantavarma-Chôḍagangadêva* is the very king who established the Gangetic dynasty in Orissa after the Kêsari line.[4] As stated above, he went to Orissa before A.D. 1118, probably at the invitation of the *Utkala* ruler who was dethroned[5] by a rival. *Anantavarmadêva* reinstated him on the throne only for a time; for soon afterwards, his protege having proved weak and unable to hold his own against his enemies, the invading prince availed himself of the opportunity to annex Orissa to his dominions, which under his son (according to Sir W. Hunter) 'reached from the Gôdâvarî right up to the Gangetic valley.' There are some inscriptions on the walls of the *Drâkshârâma* temple from which it may be inferred that, in A.D. 1128, *Anantavarmadêva* went on a pilgrimage to the place with his four or five wives and the officers of state; but it does not appear that he was the ruler of that part of the country, as *Vishṇuvardhana* is there spoken of as the reigning king in whose time these inscriptions were engraved. Dr. Fleet published some more *Ganga* plates issued by *Dêvêndravarman*, also a Ganga prince, in which the name of *Anantavarman*[6] occurs; but these are probably of an earlier period, to which the inscriptions of *Anantavarman* on the temples at *Mukhalingam* and those that have been just now noticed

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[1] *Jayaśḥya patir babhûva dramilâharôtsave.* Dramila (Draviḍa); for an explanation of this word, see Dr. Oppert's paper on the original inhabitants of Bhâratavarsha, Madras Journal of Literature and Science, 1887-88, p. 53. There is a village called *Dimcla* in Vizagapatam which perhaps took its name from the *Draviḍas* that settled there.

[2] This name is evidently assumed on account of the marriage between *Râjarâja*, a *Ganga* prince, and *Râjasundarî*, a *Chôḍa* princess.

[3] *Pûrvasyâm diśi pûrvam utkala-patim râjyê nidhâya chyutam, &c.*

[4] See note under para. 21, p. 85. [5] *Chyuta.*

[6] See the table given in my remarks (c) on Indravarman's plate below.

cannot be referred. These two *Anantavarmans* cannot be identified.

18. Some account having been given of *Anantavarman* who is referred to in the temple-inscriptions, it remains to be seen who built the temple. It is not this king that built it ; can it be one of his ancestors ?

In the copper-plate inscription No. 179 there is a long list of kings which may be put into a genealogical table,[1]

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[1] A genealogical table tracing the descent of *Anantavarma-Chôḍa-ganga.*

Vîrasiṁha.

1) Kâmârṇava I. (the first ruler) 36 yrs. (A.D. 728–764).
2) Dânârṇava. 40 yrs. (764–804).
Guṇârṇava I.
Mârasiṁha.
Vajrahasta I.

3) Kâmârṇava II. 50 years (804–854).

4) Raṇârṇava. 5 years (854–859).

5) Vajrahasta II. 15 years (859–874).
6) Kâmârṇava III. 19 years (874–893).

7) Guṇârṇava I. 27 years (893–920).

8) Jitâṅkuśa. 15 years (920–935).
(?)
9) Kaligalâṅkuśa. 12 years (935–947).
10) Guṇḍama I. 7 years (947–954).
11) Kâmârṇava IV. 25 years (954–979).

12) Vajrahasta IV. 35 years (982–1017).

13) Kâmârṇava V. ½ year (1017–1017).
14) Guṇḍama II. 3 years (1017–1020).
(by another wife) 15) Madhu-Kâmârṇava VI. 19 years (1020–1039).

16) Vajrahasta V. 30 years (1039–1069).

17) Râjarâja. 8 years (1069–1077).

18) Anantavarma-Chôḍa-gangadêva. (from 1077-78).

tracing the descent of *Anantavarma-Chôḍagangadêva.* The inscription also gives some historical information from which the following facts are extracted :—"*Kâmârṇava* I., one of the five sons of *Vîrasiṁha* (a remote ancestor of *Anantavarman*), gave over his country to his paternal uncle and, with his brothers, set out to conquer the earth and came to the mountain *Mahêndra.* Having there worshipped the god *Gôkarṇasvâmin*, through his favour he obtained the excellent crest of a bull (*vṛishabhalâñchhana*); and then, decorated with all the insignia of universal sovereignty, having descended from the summit of the mountain Mahêndra, and being accompanied by his four younger brothers, *Kâmârṇava* I. conquered (king) *Bâlâditya* who had grown sick of war, and took possession of the *Kalinga* countries. And his capital (*râjadhânî*) was the city named *Jantâvura.* Having decorated his younger brother *Dânârṇava* with the necklace (*kanṭhikâ*) of royalty as a token that he should succeed him in that kingdom, he gave to *Guṇârṇava* the *Ambavâḍi-vishaya*; to *Mârasiṁha* the *Sôdâmaṇḍala*; to *Vajrahasta* the *Kaṇṭakavartanî.* And thus for thirty-six years he governed the *Kalinga* country."—"His (*Dânârṇava's*) son, the second *Kâmârṇava*, reigned for fifty years; his city was the city named *Nagara* in which he built a lofty temple for an emblem of the god Îśa in the *linga* form, to which he had given the name of *Madhukêśa* because it was produced from a *madhûka* tree."

19. The account of the towns *Jayantapura* and *Nagara* and of Madhukêśa's temple, as given in the *Kshêtramâhâtmya* (vide para. 15 above), tallies with what is stated in this copper-plate inscription. *Jantâvura* in the plate is a mistake for *Jayantapura.* It has been seen that all the inscriptions on the temple refer to the god as *Madhukêśa.* The name of the village was until some years ago *Madhukêśvaram*, when it was changed into *Mukhalingam.*

Nagara,[1] the city of Kâmârṇava II. is still in existence under the name *Nagarakaṭaka.* The ruined temples here and there along the way from the temple of *Madhukêśa* up to *Nagarakaṭaka* testify to the fact that when the temple was built the town was extensive, so much so that the shrine was in the centre of the town. The carvings on the gate of the temple referred to in line 62 of the inscription are still held in high estimation as beautiful specimens of Hindû sculpture.[2]

20 It has now become clear that what is now called *Mukhalingam* is the town founded by *Kâmârṇava* under the name *Jayantapura* and that the temple was built by his nephew, *Kâmârṇava* II. The period of time during which the town and the temple were built, can likewise be determined from the information supplied by the inscription. The long list of the twenty kings given in the genealogical table covers a period of about three hundred and fifty years.[3] It is known that the last-mentioned king *Anantavarman* was crowned in the year 1078 A.D. *Kâmârṇava* I. must accordingly have come to the throne about the year A.D. 728 and ruled until A.D. 764; and his nephew *Kâmârṇava* II. reigned from A.D. 804 to A.D. 854. The town was

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[1] This is the town where the temple was built. Mr. Sewell's quotation that *Kâmârṇava* II. "built a palace, called Madhukêśa in honour of the finding of a *linga* under a *madhûka* tree, near the deserted city of *Trivishṭapa*" is evidently an incorrect translation. *Trivishṭapa-tiraskṛitam* (= excelling *Trivishṭapa*, the city of *Indra*) is rendered into the deserted city of *Trivishṭapa.*

[2] *Yad-dvarôrdhva-vichitra-patra-latikâś-chitrâṇi vâ paśyatâm.*

[3] Plates Nos. 178 and 180 (Ind. Antiq. Vol. XVIII., p. 161 *ff.*) also contain genealogical information slightly differing from what is given in the foot-note under para. 18. In these plates, *Chôḍagangadêva's* decent is traced only from *Guṇârṇava* (7th in the table). The names of *Jitânkuśa* and *Kaligalânkuśa* are omitted. The name of *Vajrahasta*, son of *Guṇârṇava*, with a reigning period of 40 years in one plate and 44 years in the other, is added in them while it is not found in the genealogical table given above. Other differences are with regard to the reigning periods of *Guṇḍama* (10th king), *Kâmârṇava* IV. (11th) and *Vajrahasta* (17th). In the table given above, the number of years entered against these names is 7, 25, and 30; while in the other two plates, it is 3, 35, and 33 respectively.

therefore built in the beginning of the 8th century and the temple in the beginning of the 9th century.[1]

21. Having traced the origin of the temple and of the town in which it is situated, I have next to consider who it is that, the *Kshêtramâhâtmya* says, 'rebuilt the temples in the *Kaliyuga.*' He is said to be a *Kaṭaka* (Orissa) prince, by name *Madhukarṇa-Gajapati* of the Ganga dynasty, and, curiously enough, a descendant of *Vishṇuvardhana.* Sir W. W. Hunter's list of the Orissa *Gangas* does not contain the name of *Madhukarṇa*; but in a list of the Parlakimedi Zamindars, who are called *Gajapatis* and who claim to be the descendants of the Orissa *Gangas* (published in Mr. Sewell's *Antiquities,* Vol. II. pages 185-6), the name *Madhukarṇadêva* occurs and the prince is said to have reigned from A.D. 1392 to 1423. Sir W. Hunter says that the Kimedi country was conquered by the Orissa *Gangas*; but it is not known when that event took place. The Parlakimedi tâluk contains several villages that are known to be included in the ancient *Kalinga* kingdom, before the invasion of Orissa by *Chôḍagangadêva.* Mukhalingam and many villages in its neighbourhood and the *Sôdâ* country, for instance, were formerly parts of Kalinga ruled by *Ganga* princes, the predecessors of *Chôḍagangadêva*; and these are now in the Parlakimedi tâluk, still in the possession of a *Ganga* prince, the Parlakimedi Zamindar. Of the history of *Kalinga* after *Chôḍagangadêva's* invasion of Orissa, nothing is known. His descendants established themselves in Orissa, making their original kingdom a mere dependency. But it is very probable that some minor princes of the family were left in Kalinga to maintain the authority of the *Gangas.* A copper-plate inscription which I have partly deciphered and of which an abstract of contents is given below, speaks of a *Ganga* prince ruling over a small principality, while another

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[1] Or it may be fifty years earlier according to the other plates.

Ganga prince was the supreme lord of Kalinga. Whether the Parlakimedi *Gangas* are directly descended from the *Ganga* princes that remained in Kalinga after the establishment of the *Gangetic* dynasty in Orissa in the twelfth century, or from *Kapilêndradêva,* an Orissa *Ganga* king according to the tradition[1] current in the district, is still a problem to be solved. But that they are, though remotely, connected with *Anantavarma-Chôḍaganga* is beyond doubt. In a previous paragraph some facts were stated which identify the *Anantavarma-Chôḍagangadêva* of *Kalinga* and *Chôr Ganga,* the founder of the Orissa Ganga dynasty.[2] Two more proofs may be added confirmatory of what has been said. One is the tradition noticed by Sir W. Hunter that in the beginning of the twelfth century a *Ganga* chief of 'the Southern Kingdom,' named *Chôr Gang,* invaded Orissa; and the other, more conclusive than the first, is that the Orissa *Gangas* (before that dynasty became extinct in Orissa on the murder of *Pratâparudra's* second son and all belonging to the royal family by the minister *Gôbind Bidyâdhar,* who afterwards ascended the throne in A.D. 1534) and the Parlakimedi *Gangas* both belong to the *gôtra* of *Atri,* the same from which the *Kalinga Gangas* trace their descent.[3] Returning to *Madhukarṇadêva,* it is certain that he was the ruler of a part of Kalinga, in which it may be

[1] The tradition is that *Kapilêndradêva,* a *Ganga* king of Orissa, had eighteen sons by his lawfully married queen and another by a concubine, whom he appointed as *yuvarâj* (heir apparent). Thereupon the eighteen sons quarrelled with their step-brother and left the country; one of them went to *Bâmunda* in the Central Provinces and another to the Kimedi country and established separate kingdoms.

[2] In Sir W. Hunter's list of the Orissa Gangas, the date given to *Chôr Gang* (still contracted into *Chôrang*) is A.D. 1132-1152. This, if correct, will make the reign of the king too long, *viz.,* 74 years including the period of his administration of Kalinga before the conquest of Orissa. But Hunter's date is not based upon any genuine authority, as far as it can be seen in his *Annals of Orissa.* Whereas, *Anantavarma-Chôḍagangadêva's* date is beyond question

[3] In Plate No. 178. l. 3 ff. *Âtrêyagôtrâṇâm...trikalingamahîbhujâṁ Gangânâm.*

that Parlakimedi was included. It is said that there is an inscription on a wall of the central shrine of the temple, which speaks of him as one that repaired the temple and built a *prâkâra* or compound wall round it. But what perplexes one in the account of the *Kshêtramâhâtmya*, is the statement that *Madhukarṇa* is a descendant of *Vishṇuvardhana*, "*Vishṇuvardhana-pûrvakaḥ.*" Can it be that the founder of the Eastern Chalukya dynasty is the person that is meant here? Even if the *Kshêtramâhâtmya* be supposed to be a Brâhmanical manufacture of the period of *Madhukarṇadêva*, on account of the prophetic references made to him, it is to be noted that, about 500 years ago, there was a tradition current in these parts, connecting the Orissa *Gangas* with some *Vishṇuvardhana*, most probably of the Chalukya dynasty. It may be, on the other hand, that the poet who composed the *Mâhâtmya*, ignorant of the true lineage of his hero, thought fit to glorify his descent by tracing it from the first Vishṇuvardhana of the Chalukya dynasty, of whose fame the vanity of *Madhukarṇa* may have, by this means, led him to partake.

22. Summing up my foregoing observations, I note with pleasure that the village Mukhalingam has been in existence from the eighth century with a unique history of its own. It is a *Ganga* prince, *Kâmârṇava*, that built a town there in the 8th century; it is a *Ganga* prince, another *Kâmârṇava*, that erected the principal temple there in the 9th century; it is a *Ganga* prince, *Anantavarman*, that saw the temples there in a flourishing condition in the 12th century; it is again a *Ganga* prince, *Madhukarṇa*, that repaired them in the 14th century; it is a *Ganga* prince too, *Gourachendro*, that owns the place and the temples there at the present moment. For about eleven centuries Mukhalingam has been in the uninterrupted possession of the *Gangas*, a dynasty whose kings once extended their

sway from the Ganges to the Kṛishṇâ; covered the country with magnificient temples; patronised learning by inviting educated Brâhmans for whose support villages were granted rent-free; and are still remembered by the people as the great "Kalinga-Mahârâjas." It may surprise many to know for the first time that the present Zamindar of Parlakimedi is the real representative of these famous Ganga kings. But it is a fact.

23. (V.) The *Padmanâbha Hill.*—To the east of the village at a short distance is a hill and one or two springs on the top of it. There is an idol representing *Vishṇu,* over which an insignificant pagoda was lately erected. The *Kshêtramâhâtmya* says that *Vishṇu* came to reside there as a *Kshêtrapâlaka* or guardian of the holy place. I had no time to go to this hill and cannot, therefore, say anything certain of the antiquities there.

24. (VI.) *Old coins.*—It is said that on rare occasions during the rainy season a lucky person picks up some gold coins which are not larger than a big chilly-seed. The coins bear the impression of the bull *Nandi.* I have several of these fanams, received from Mr. Fawcett, formerly Superintendent of Police, Ganjâm. One of the coins is figured by Sir. W. Elliot in his *Coins of Southern India,* Plate III. No. 93. Similar coins are said to have been discovered at *Dantavaktṛinikôṭa,* at a distance of about nine miles from Mukhalingam, and also at Calingapatam. The *Kshêtramâhâtmya* states that, when *Madhukarṇa-Gajapati,* whom the gods requested to rebuild the temples, was hesitating to undertake the task for want of funds, a thick shower of these coins fell round him by the favor of *Śiva.*

25. (VII.) *Old Forts.*—It seems that formerly a large part of this village was enclosed by a mud or brick wall. A raised platform of brick work, extending over a large area, is still visible.

Tradition and the *Kshêtramâhâtmya* as well as the appearance of the village and the inscriptions support this view. I said above that there was a village at a distance of about two miles, called *Nagarikaṭakam*, which is a place of considerable importance. The very name implies that it was the residence of a king. The town of Cuttack (Kaṭaka), meaning royal residence according to Hunter, in Orissa can be supposed either to have given its name to this place, or to have taken its name from it. Several forts now in ruins are said to be in existence in some villages about Mukhalingam, such as Lakshmînarsupêṭa, Karakavalasa, Pata-Hiramaṇḍalam, and Dantavaktṛikôṭa. The Rev. J. R. Hutchinson, who visited the last mentioned place, has given an interesting note on the fort there in his *Revised List of Antiquities*, published in the Journal of this Society for the session of 1887-88. "The earthen embankment of the ancient fort is still in good preservation, from 30 to 40 ft. high in some parts." There are references to this fort in the *Vishṇupurâṇa*. In a paper entitled '*the Dakhan in the time of Gautama-Buddha*,' published by the Rev. Thomas Foulkes (Ind. Antiq., vol. XVI.), a list of the important cities in Kalinga is given, in which *Dantapura* is mentioned. "The *Tooth-relic* temple of *Dantapura* had one or more upper stories containing hundreds of rooms; it was inlaid with gold, adorned with hanging pearl necklaces, difficult like the early sun to look at, owing to the radiance of various gems dazzling the eyes." I was told that costly jewels and gold coins had been until a few years ago discovered by cultivators during the rainy season. Several persons, originally poor, are said to have become wealthy by such discoveries. There is a village named *Danta* in the Narasannapêṭa tâluk, now in the possession of a landholder whose son told me that he saw in the village a cave, and some stone figures and building materials at its entrance.

An examination of these ruins will not fail to be instructive.

26. *Kâlinga.*—There is a class of persons known by this name, dwelling in some parts of Ganjâm and Vizagapatam, but rarely met with elsewhere. As the priests of the Mukhalingam temples belong to this class and as they claim to have been such from time immemorial, I think it will not be out of place to give a short account of these people. As their name Kâlinga implies, they must be preeminently the inhabitants of the Kâlinga country. In the Malay countries, all natives of India are designated as ‘ Kalings ’ A sect of Baniyas or Kômaṭis in this district are called Kâlinga Kômaṭis ; but between the Kâlingas and these Kâlinga Kômaṭis there is no connection whatever. The Kâlingas must have maintained their individuality for a long time. They do not intermarry with any other caste ; and they eat only food cooked by Brâhmans. They generally speak Telugu, but a few of them living in the north of the district speak Oriya, the prevailing language there. They are divided in two classes, the Kintali Kâlingas and the Booragam Kâlingas. The former allow the re-mariage of widows and the divorced, and do not intermarry with the latter though they dine with them. The religion of the Kâlingas is mainly Śaiva, though many now profess Vaishṇavism ; but religion does not create any social differences, a Vaishṇava being allowed to marry a Śaiva, provided that both belong to the same class. The profession generally followed by these persons is idol-worship, cultivation, and cart-driving. There are some landlords and a few officials among them ; but as a class they are poor and uneducated. They are, no doubt, a hard-working and contented people, never once stooping to beg.

27. What makes these people interesting to a curious observer, is their anomolous position in society. The

Kâlinga-man, Âryan as he is by his appearance and by his customs social and religious, is no better treated than a Śûdra. He wears a sacred thread like a Brâhman, shaves his head like a Brâhman, and looks almost like a Brâhman. He belongs likewise to the *gôtra* of some Vêdic sage like Bharadvâja. He observes some religious rites, among others the birth-ceremony, the *upanayana*, the marriage and even the *sîmanta* which has fallen into disuse among the Brâhmans of these parts. He has the exclusive right to worship in some temples, as in the case of those at Mukhalingam. He then utters Vêdic mantras. Like the Brâhmans of the North, like his neighbours, the Oriya Brâhmans, he eats fish and perhaps flesh also : (I hear the Mukhalingam Kâlingas have abstained from animal food) but he offers none to the gods. And however justly he may claim to be a Brâhman, he is looked down upon by the present Brâhmans and is regarded as no better than a Śûdra. The majority of the Kâlingas, by their profession as cultivators and cart-drivers, though equal in rank to the Oriya Brâhmans following the same professions, have recently come to be in a degraded position, whereby the Brâhman priest who is now invited to officiate during the celebration of any religious ceremony, insolently declines to sanctify it by the utterance of the Vêdic mantras. The Kâlingas, like some of the Vaiśyas, have, I think, come to forego their religious rights by their own indifference and negligence combined with the jealousy and selfishness of the Brâhmans. Sir W. W. Hunter, in his *Annals of Orissa* (Vol. I. pp. 242-264) recorded the chief varieties of Brâhmans which he met with from the Himâlayas to the Cape of Comorin. There are fishing Brâhmans, ploughing Brâhmans, shepherd Brâhmans, and so on, not a jot better, but in some cases worse than the Kâlingas in religion, in social position, and in occupation. The older the colony, the less

sacred it has become, and the later Brâhman colonists have always regarded their predecessors with contempt. "Almost every province of India," says Hunter, "contains two widely diverse sorts of Brâhmans, separated not merely by family or social difference, but apparently by the more rigid distinctions of race. The characteristics of these two classes vary in different provinces. But two facts can be almost universally predicated of them, *viz.*, that the higher order traces its origin to a comparatively recent migration from the North, and deemed it necessary to explain the existence of the lower sort by some local legend. They nowhere intermarry, eat together, or have anything in common."

28. Even so, the Kâlingas are, according to a legend, said to have lost their sanctity. Sir W. W. Hunter did not notice the Kâlingas in his elaborate sketch, but his conjectures regarding the origin of some of the oldest castes of the present degraded Brâhmans may be quite as well applied to the Kâlingas. He seems to say that the Kâlingas who colonised Java, were those Buddhist Yavanas or Ionian Greeks, converted to Buddhism, who were in the 6th century driven out of Orissa by the newly invited Brâhmans. "The new comers professed the royal religion, and were Śaivites to a man. They found however a priestly class already existing, whom it was impossible to extirpate and unwise to ignore. The Buddhists recruited their clergy from every class of the people; but doubtless the preceding waves of Âryan settlers who had from time to time made their way into Orissa, formed the upper ranks of the Buddhist community. The Brâhman colonists of 500 A.D. were not at first strong enough to degrade the Buddhist element into the mass of the rural populace, and they seem to have conciliated their predecessors by admitting them to a sort of nominal equality. The old Âryan

settlers, who had lapsed into Buddhism, obtained the name of the Brâhmans and retain the title to this hour. But as the power of the new comers expanded under the benignant smiles of royalty, they interdicted these so-called old Brâhmans from all intercourse with themselves. They had refused the *jus connubii* from the first, and the nominal Brâhmans formed a distinct caste, which by degrees sank into the mass of the peasant population."

29. I have not been able to make out whether the Kâlingas of Ganjâm are originally a branch of the Buddhist *Javana (or Yavana) Kâlingas* who left their home to colonise Java, or an Âryan tribe who had been Buddhists before they were supplanted by the later Brâhman immigrants, and afterwards, by a natural compromise, admitted into the Brâhman pale. Nothing but a close examination of their customs and institutions as well as of their traditions can unravel the mystery attaching to this people, and it is to be hoped that scholars will take up the subject and attempt a solution of the problem.

30. (IX.) *Teligipêṇṭa inscription and linga.* When I was at Mukhalingam, I was informed that at Teligipêṇṭa, a village four miles down the river on its right bank, there was an inscription on a stone. I went there and found it in a field close to the river. It is on two sides of a stone. The characters are transitional Eastern Chalukyan of the 11th century; the language is Telugu; it is dated in the Śaka year 1067, recording a grant of land to a temple of Śiva. The donor's name appears to be Chôḍaganga.

One is naturally surprised to see the name of *Chôḍaganga* used as it is here without any royal titles attached to it, since it is likely to be identified with the well-known name of *Anantavarma-Chôḍagangadêva.* But this *Chôḍaganga* is an officer of *Anantavarman,* who in A.D. 1135-36 granted to him a village along with the hamlet of *Trillingi-*

vâṭaka,[1] the very place in which the present inscription is to be seen. The name '*Trillingi*' probably came to be applied to the village on account of the people who spoke the *Trilingi* language. Though its speakers have reduced the word to '*Telugu,*' the Uriyas still use a fuller form '*Telingi*'; and *Telingi* or *Teligi*[2] is now the actual name of the village, with '*pêṇṭa*' or '*pêṭa,*'[3] simply meaning a suburb, added to it. There must have been in this village a regular temple of which the floor and the *linga* or idol alone are now visible. It is to this idol in all probability that *Chôḍaganga* made the grant referred to in the inscription, in A.D. 1145, about nine years after he had obtained possession of that village by the favour of his master and king. At a short distance from *Teligipêṇṭa* is still in existence a village named *Chôḍâpuram*, probably called after *Chôḍaganga.*

31. (X.) *Copper-plate inscriptions.* I was told at Mukhalingam that, about eight years ago, a copper-plate inscription had been discovered in a field there and sent to the Deputy Tahsildar of Parlakimedi. But Mr. Sewell's *Lists* do not mention any inscription belonging to this village. Having before heard that in some of the villages near Mukhalingam two or three plates had been discovered, I made inquiries for them and succeeded in getting one set of plates from a Brâhman landlord of Achyutapuram, who had some eight years ago obtained it from his ryot. I took a copy of it and returned it to the owner who could not make up his mind to part with it on any terms. The second of the inscriptions dealt with below has an unfortunate history. It is,

[1] See Plate No. 180, Ind. Antiq. Vol. XVIII. The reading *tittilingi* in line 32 is not correct. The alternative reading proposed in the foot note is to be substituted.

[2] An *ardhânusvâra* is heard between *li* and gi when it is pronounced.

[3] The vulgar uses, in pronouncing this word, an *ardhânusvâra* between the two syllables, but the learned use it only in writing.

I believe, one of the sets of plates which Mr. Grahame, C.S. purchased at Chicacole; but, having been mislaid, it was not presented with the rest to the Madras Museum. As I am known to be interested in these inscriptions, the head clerk of the Principal Assistant Collector's office gave me information of its existence there and kindly permitted me to take a copy of it. The third sets of plates was bought at my instance by Sri Padmanabha Narayanadeva, brother of the Parlakimedi Zamindar whom I persuaded to make a present of it to the Madras Museum. Dr. Hultzsch wrote to me for a loan of these plates and also requested the Collector to obtain them from me. I gave information to the Collector as to where the original plates could be had, as I had only copies of them with me. Dr. Hultzsch will have obtained them by this time and will likely publish them with his notes. But, having first brought them to light and having also deciphered them, I may be allowed to publish my own remarks on them, which may be taken for what they are worth.

1.—Indravarman's Plates.

32. This is a set of three plates, each about $5\frac{7}{8}$ inches by 2 inches, strung together by a ring with a seal on it, worn out and not recognisable. The letters are engraved deep enough and legible. The language is Sanskrit throughout; and, except the usual benedictive and imprecatory verses and the lines containing the writer's name on the third plate, the text is in prose. From the predominance of the Eastern Chalukya characters (of A.D. 680 according to Burnell's Plate No. 5; *vide* his *South-Indian Palæography*) it may be inferred that the present inscription belongs to the seventh century. On historical as well as palæographical grounds, Dr. Fleet is inclined to refer *Indravarman* to about Śaka 579-582 (A.D. 657-58 to 660-61).

Abstract of Contents. (*a*) From the victorious city of *Kalinga* (l.1), he who has had the stains of the *Kaliyuga* washed away by bowing down before the feet of the god *Gôkarṇasvâmin* (l. 2) and who has acquired supremacy over the whole *Kalinga* by the edge of his own sword (ll. 3 and 4), the founder of the pure *Gânga* dynasty (l. 6), *Mahârâja Indravarman* (l. 8);

(*b*) Commands the *kuṭumbins* or house-holders of the village *Siddhârdhaka* in the district of *Varâhavartanî* (ll. 8 and 9):

(*c*) Be it known that, inasmuch as we have separated a portion of the land of the *Râjataṭâka Kshêtra* (l. 10) and bestowed it free from all dues, during the time of *udagayana* (l. 13), on *Durgaśarman*, a *brahmachârin* of the *Gôtama gôtra*, he should be allowed to enjoy it freely, and none should molest him.

(*d*) The boundaries of the land are given from line 15 to 17.

(*e*) The usual benedictive and imprecatory verses with a request that future rulers should recognise the grant (ll. 17-22).

(*f*) The grant was made in the 87th of the years (expressed in words as well as in figures) of the increasing successful reign, on the *amâvâsyâ* of the month of *Chaitra* (l. 23).

(*g*) Written (composed) under the command of the best king *(râjasimha)* by *Vinayachandra*, son of *Bhânuchandra*.

Remarks. (*a*) The characters used in this plate are quite similar to those of plate No. CXLII. published in Vol. XIII. of the *Ind. Antiq.*, page 119; and the text is word for word the same as that employed in the 'Parlakimedi grant' of *Indravarman* (*Ind. Antiq.*, Vol. XVI. p. 131) as far as the end of the tenth line, the only exception being that the word *sukha* is added between *sarvartu* and *ramaṇîyât* (l. 1) in

the latter. The benedictive and imprecatory verses are also the same in both the plates; only one more *ślôka* is given in the 'Parlakimedi grant.' Both the documents are dated on the same model, and the same writer composed them, the *anushṭubh ślôka* which contains the writer's name being also the same. They were issued at an interval of only four years, in the 87th and the 91st years. The name of the prince in both of them is *Indravarman*. It is highly probable that the same king issued them. But there are two more inscriptions issued by an *Indravarman* (Nos. CXLII. and CXLIII., published in the Indian Antiquary, Volume XIII, pages 119 and 122) in the 128th and 146th years. Dr. Fleet is inclined to think that this *Indravarman* is another king of a later period, perhaps a grandson of the first. His opinion is based on the following grounds:— 1. If all these plates are referred to the same *Indravarman*, a reign of about sixty years has to be allowed to one king; and this is improbably long. 2. The *Indravarman* of the Parlakimedi grant has the *biruda* of *Râjasiṁha*, which the *Indravarman* of the later plates has not. 3. One generation of scribes passed away in the interval. 4. The king of the earlier plate is called the founder of the dynasty, *Gângâmala-kula-pratishṭhaḥ*, which the kings of the other plates are not. Now, the first and the third grounds may, to a degree, render Dr. Fleet's supposition probable, though one may as well be inclined to think that the same *Indrvarman* issued all the plates and his reign was exceptionally long. Dr. Fleet's second and fourth grounds are, in my opinion, frail. The word *Râjasiṁha* occurring in the *anushṭubh ślôka* at the end of the inscription does not convey the idea of any *biruda*. *Śâsanaṁ râjasiṁhasya* simply means 'the order of a king, the best of the râjas.' If the idea of any title were implied in the word, the place for it would be the beginning of the inscription where his name

is mentioned. Dr. Fleet has given too much importance to the epithet *Gângâmala-kula-pratishṭhaḥ*. It is as meaningless to me as the other epithet, applied to almost all, namely, *nija-nistrimśa-dhârôpârjita-sakala-kalingâdhirâjyaḥ*, with its variant *svâsi-dhârâ-parispandâdhigata, &c.*; 'he who acquired sovereignty over the whole Kalinga by (the force of) the edge of his own sword.'

(*b*) There are several plates, published in the *Indian Antiquary*, which were issued by the *Ganga* kings of *Kalinganagara*. Are the plates of *Indravarman* in any way related to them? In order that the relation may be seen as clearly as possible, it is necessary to arrange, in some intelligible form, all the available facts bearing on the question.

No.	Reference to Plates.	Name of the king.	Name of the king's father.	Date.	Remarks.
1	No. CXXXVIII. (Vol. XIII. Ind. Antiq).	Nandaprabhanjanavarman ...	Not given.	Not given.	The commencement of the era is not known.
2	No. 214 of Mr. Sewell's Lists.	Prithivivarman	Mahêndravarman.	do	
3	No. CL. (Vol. XIII. Ind. Antiq.)	Dêvêndravarman	Anantavarman.	51	
4	No. 1 of this account...	Indravarman ..	Not given.	87	
5	No. 169. (Vol. XVI. Ind. Antiq.)	Indravarman ...	do.	91	
6	No. CXLII. (Vol. XVI. Ind. Antiq.)	Indravarman ...	do.	128	
7	No. CXLIII. (Vol. XIII. Ind. Antiq.)	Indravarman ...	do.	146	
8	No. 2 of this account...	Dêvêndravarman	Guṇârṇava.	183	
9	No. 177. (Vol. XVIII. Ind. Antiq.)	Dêvêndravarman	Anantavarman.	254	
10	Dr. Hultzsch's.	Anantavarman..	Indravarman.	304	
11	No. CLII. (Vol. XIV. Ind. Antiq.)	Satyavarman ...	Dêvêndravarman.	(51 ?) 351	

In this list I have included all the plates that I have had access to,[1] relating to what Mr. Fleet seems to term 'the dynasty of the early Gângas'. I have not entered

[1] The Rev. J. R. Hutchinson says that he "has in his possession inscriptions which throw considerable light upon this (the history of the Gânga kings)" (p. 154 of this journal for 1887-88). I do not know whether these are published.

here those plates which refer to *Anantavarma-Chôḍaganga-dêva* or to any king known to belong to his dynasty. The information contained in No. 10 was first obtained by me from a manuscript copy of it at Vizianagram; but Dr. Hultzsch subsequently sent me a fac-simile of the original plates which are now with him, and a paper on which is, I am told, shortly to be published.

(*c*) I have to submit a different reading of the date of the plates of Satyavarman (No. 11 in the table above). Lines 34 and 35 of the grant contain the words expressing the date, which are *Gângêya-vansa-saṁvachhara-śata-tray-aika-pañchâsat*, &c. The syllables that appear to me like *tra* and *yai* (in the fac-simile), were read by Dr. Fleet *nâṁ* and *yê*. It is not possible to make *nâṁ* of the fifth letter in the last line of the plate; the *dîrgha* or *â*-sign does not, I think, descend so far as it is there, half enclosing the letter as within a bracket, and there is no nasal sign on the top of the letter. The curved line appears more like a *rêpha* mark. The sixth letter has two strokes above it, making it *yai*; only one would be necessary to make it *yê*.

(*d*) The table given above contains a list of but eleven plates issued by eight or nine kings during a period of about 350 years. Until more information is obtained, nothing definite can be stated regarding their relations to one another or their relations to the Ganga kings of *Chôḍa-gangadêva's* dynasty. The era to which the dates of these plates refer, is still unknown; but there is no need to suppose that there is more than one era to which they refer. Most probably the era commences with the establishment of the dynasty at *Kalinganagara* or in the *Mahêndragiri country* by the father or the grandfather of Indravarman in the fourth century A.D. To attempt an arrangement of the list of names we have in a genealogical table is only to draw on imagination for what is not supplied by actual facts.

2.—Dêvêndravarman's Plates.

(*a*) This is a set of three plates strung on a ring to which is attached a seal. The emblem on the seal is not recognisable. The characters of the plate are for the most part like those of *Indravarman's* plate No. CXLII. The date is given in decimal figures as well as in words. The language used is Sanskrit.

(*b*) The village *Voppangi* mentioned in the plates as having been constituted into an *agrahâra,* is situated at a very short distance from Chicacole and near *Arasavalle,* a place of pilgrimage containing a temple dedicated to the sun-god. The donees are said to belong to the *Kṛishṇâ-trêya gôtra,* a name that does not generally occur. It is not known how it differs from the *Âtrêya gôtra.*

(*c*) The name of *Dêvêndravarman's* father is curiously enough *Guṇârṇava* Names ending in *arṇava* frequently occur in the genealogical table contained in the Vizagapatam grant of *Anantavarma-Chôḍaganga.*

Abstract of Contents. (*a*) From the victorious city of *Kalinga,* he, who has had the stains of the *Kaliyuga* washed away by bowing down before the feet of the god *Gôkarṇa-svâmin* on the summit of the hill *Mahêndra,* the best of the *Gânga* dynasty, and who has acquired by the edge of his own sword the supremacy over the whole *Kalinga* country, *Mahârâja Dêvêndravarman,* son of *Guṇârṇava* (ll. 1—8) ;

(*b*) Commands the *kuṭumbins* or householders of the village *Voppangi* in *Saraḍamaḍamba* (?) in the district *Krôshṭukavartanî* (ll. 8—9) :

(*c*) Be it known unto you—whereas this village is by us granted rent-free, constituted into an *agrâhâra,* on the 8th day of the bright fortnight of the month of *Mâgha* in *Udagayana* (l. 11), to the *brahmachârins* of the Kṛishṇâ-trêya gôtra, named *Charambaśarman, Bhavaśarman,*

Vishṇusarman, &c., brothers inhabiting *Kalinganagara,* let them enjoy it freely (l. 14).

(*d*) The boundaries of the village are given up to line 19.

(*e*) Some benedictive and imprecatory verses, and one or two lines requesting future rulers to continue the gift.

(*f*) Written (composed) by *Pallavachandra,* son of Mâtṛichandra, under the orders of the king, in the presence of the great *Sabara-Nandiśarman.*

(*g*) In the year 183 of the increasing successful reign (expressed in words and decimal figures), on the 27th day of the month of *Śrâvaṇa.*

(*h*) Engraved by *Sarvachandra,* son of *Khaṇḍichandra-bhôgika.*

3.—Vajrahasta's plates.

(*a*) This is a set of three plates, each $8\frac{7}{8}$ ins. by $2\frac{7}{8}$ ins. joined by a ring which has a seal, $1\frac{3}{4}$ in. in diameter, bearing the figures of a bull couchant, the moon above, and a floral device below it; between which and the bull are some characters, perhaps "srî hara........." The language in which the inscription is composed, is Sanskrit, but very faulty. Leaving out of account trifling errors, from which very few inscriptions are free, the general form in which the grant is recorded, is in the beginning of it quite irregular.

(*b*) As regards characters, it may be said that the plate is a confusion, an amazing jumble of various types of different periods, a curious specimen of the writing of a transitional period in this part of the country where the northern and the southern alphabets seem to have fought for supremacy. Chalukya characters from the oldest to the latest, early *Nâgarî* as given in Dr. Burnell's plate No. XXII. as well as modern *Nagarî* are all represented in it. Three kinds of *m, s, j, y,* and *h* and two kinds of *k, n, b, v, r, g, ch* and *a* among others are noticeable.

(*c*) The text of the inscription is almost wholly on the inner sides of the first and the third plates and on both the sides of the second plate; but on the outer sides of the first and the third are inscribed some more characters, not so well shaped as those in the text, but more or less similar to them in form. These seem to me to contain the date; but I could not decipher them. The plates were sent to Dr. Hultzsch who may be able to make out what they are.

(*d*) The importance of these plates consists in their being the only ones that have been discovered relating to *Vajrahasta*. There are four or five such kings whose names occur in the Vizagapatam plate No. 179. It is worth noting that during the reign of *Vajrahasta*, himself a *Ganga* prince, another prince of the same family is said to be ruling over a small principality. The names of some influential families are mentioned in the plate: the *Kadamba-vaṁśa*, *Nidu-santi-kula* and *Naggari-santuki-kula*. The mention of a *Kâyastha*, a Bengâl scribe, as one of the prince's officers and the occurrence of Oriya words like *patthara*, 'a stone,' are also to be noted.

Abstract of Contents. (*a*) During the reign of *Mahârâja Vajrahasta*, who has had the stains of the *Kaliyuga* washed away by bowing down to the feet of the god *Gôkarṇasvâmin* on the *Mahêndra* hill, &c., (ll. 1—8.)

(*b*) *Śrîmad-Dhâraparâja*, son of *Choṭṭa-Kâmaḍirâja* of the *Ganga* dynasty, the ruler of *Pancha-vishaya*;

(*c*) Commands the *kuṭumbins* of *Lankâ-kôṇa* (ll. 10-11.)

(*d*) Be it known unto you that to the *Râjaputra*, named *Kâmaḍi*, son of *Erayamârâja* of the *Naggari-santuki-kula*, who has become famous by his many victories in battle, we have granted, on the occasion of marriage (*kanyâdâna-nimittê*), the village of *Hossalsi*, free from all dues. (Line 15)

(*e*) Boundaries of the village (up to line 21).

(*f*) The head man (*pâlaka*) of this village, *Srî-Ugrakhêdirâja* of the *Kadamba-kula*, and those persons who belong to the *Nidusanti-vaṁśa*—let them not molest him (l. 23).

(*g*) The usual benedictive and imprecatory verses (l. 26).

(*h*) The *Âjnapti* of this grant is (?) of the *Kâyastha-kula*. Composed by *Drôṇâchârya* and engraved by *Kanchyamâchârin*.

Note.—It has not been considered necessary to print the author's transcripts of the plates as the texts have now appeared in the *Epigraphia Indica* (Vol. III. Nos. 20, 21, & 31) with photo-lithographs.

Ed.

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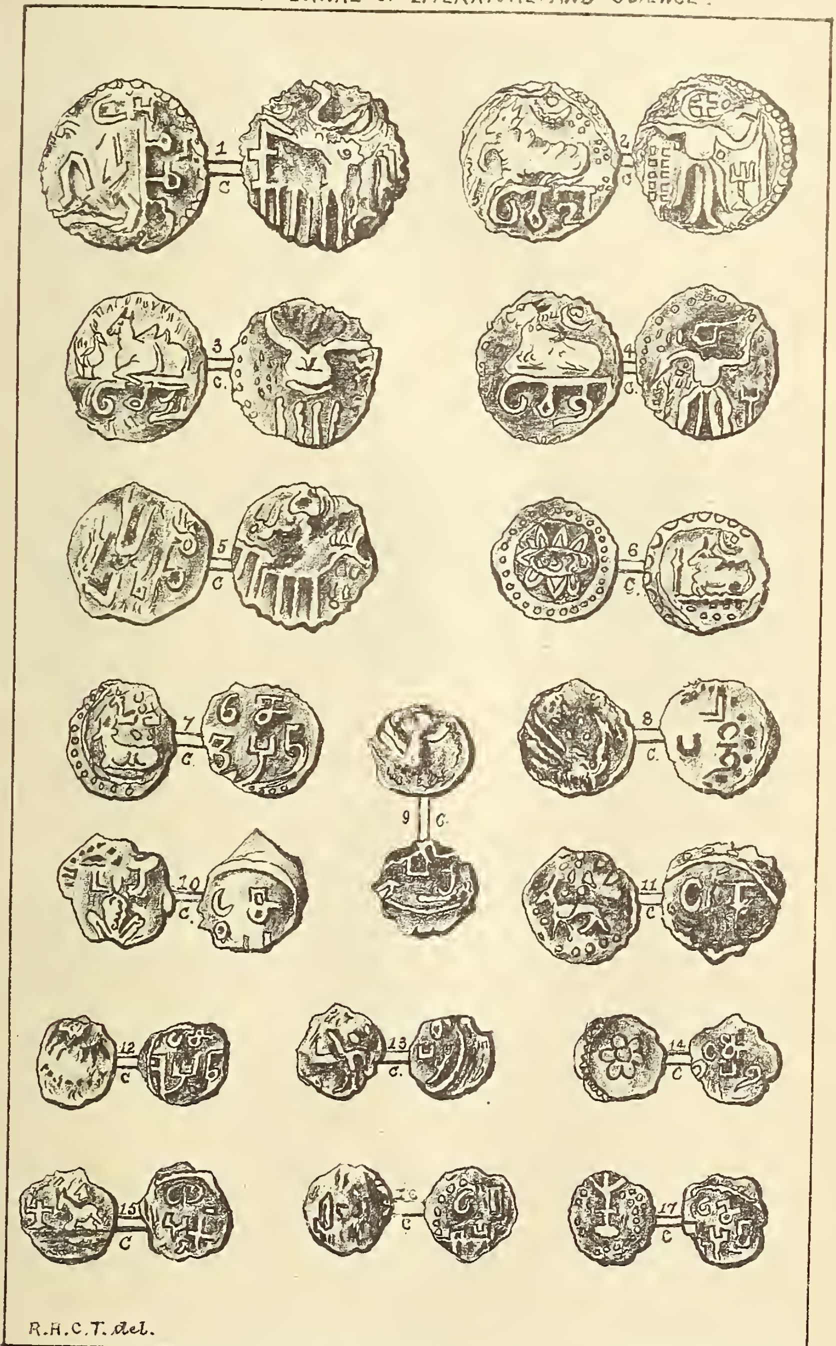

1895

SETHUPATI COINS.

A.J.D. BARREN. LITHOG.

BRITISH MUSEUM
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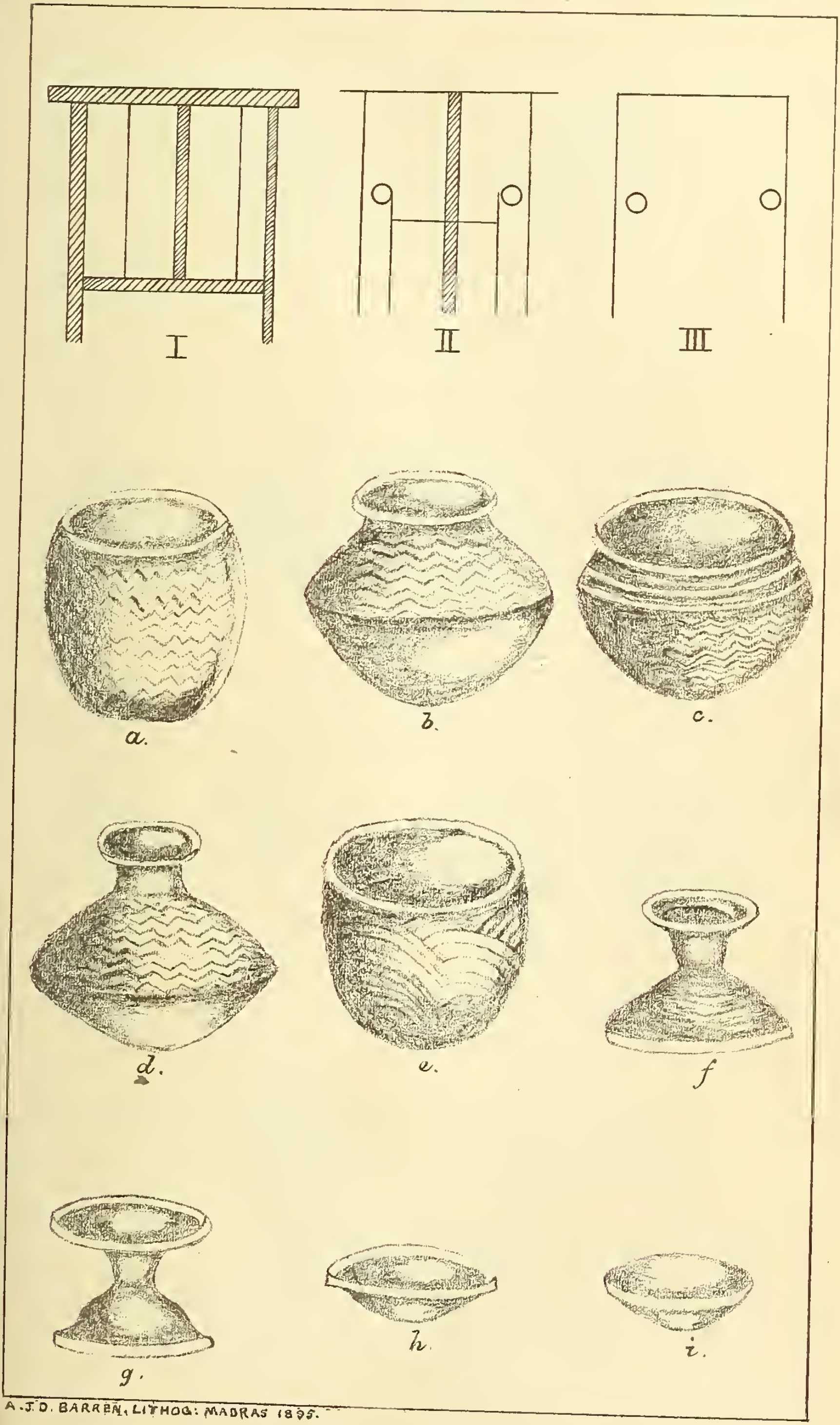
23a



A. J. D. BARREN, LITHOG: MADRAS 1895.

33a

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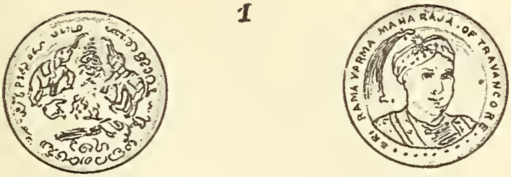

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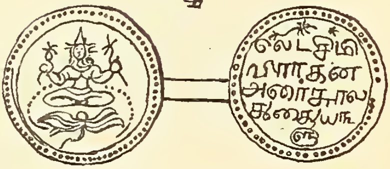

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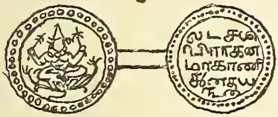

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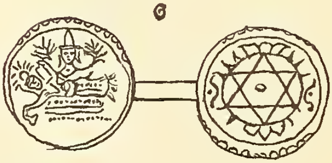


7

8

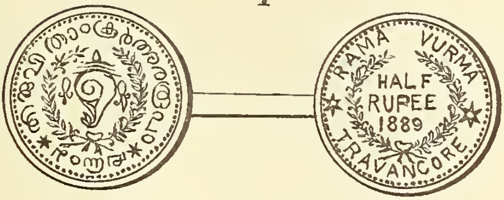
COINAGE OF TRAVANCORE.

PLATE I GOLD COINS.

Note – *Plate I, 2. Cannot be given as no copy of the medal can be obtained.*

A.J.D. BARREN. MADRAS 1896.

1



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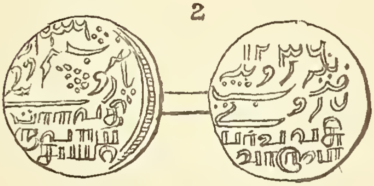

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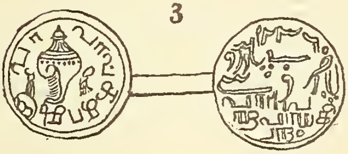

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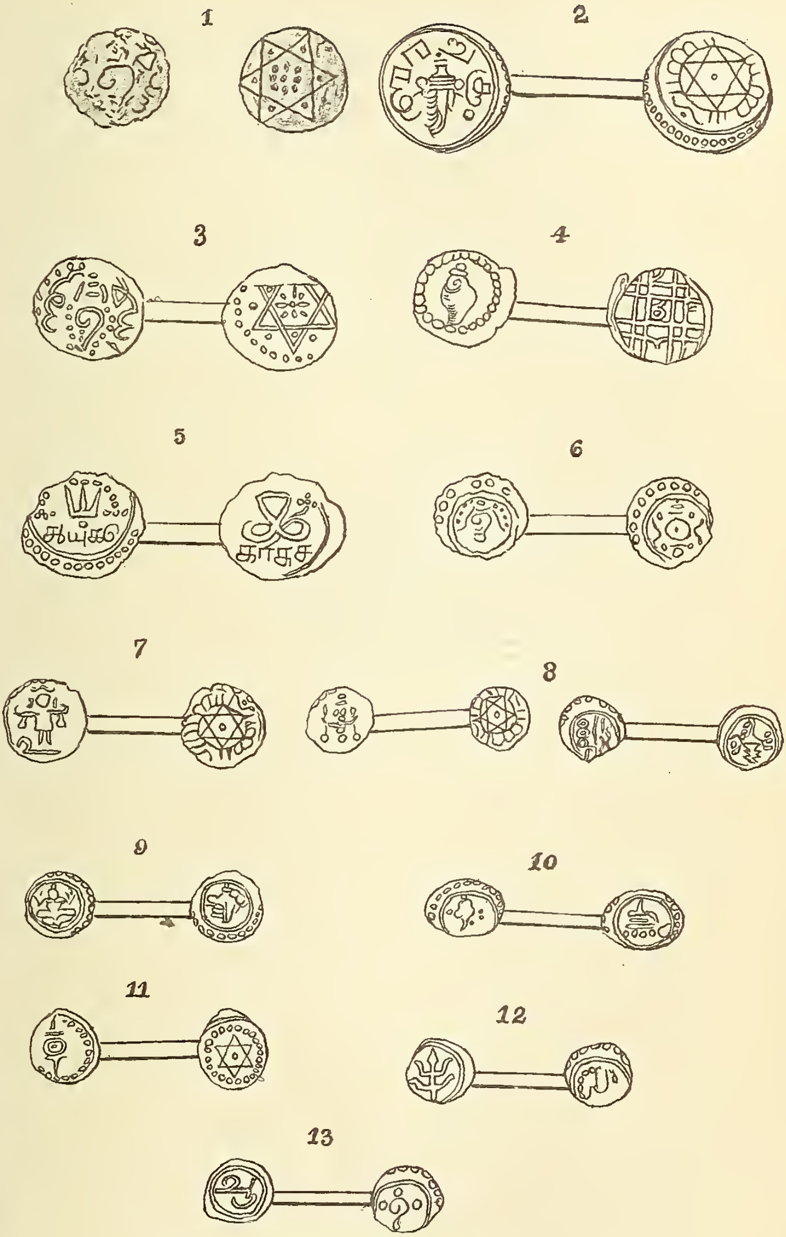
5

COINAGE OF TRAVANCORE.

PLATE II. SILVER COINS.

A. L. D. BARREN, MADRAS 1896.



Coinage of Travancore.
Plate III. Copper coins.

A. J. D. Barren. Madras, 1896